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# The Journal

OF THE

## Michigan State Medical Society

ISSUED MONTHLY UNDER THE DIRECTION OF THE COUNCIL

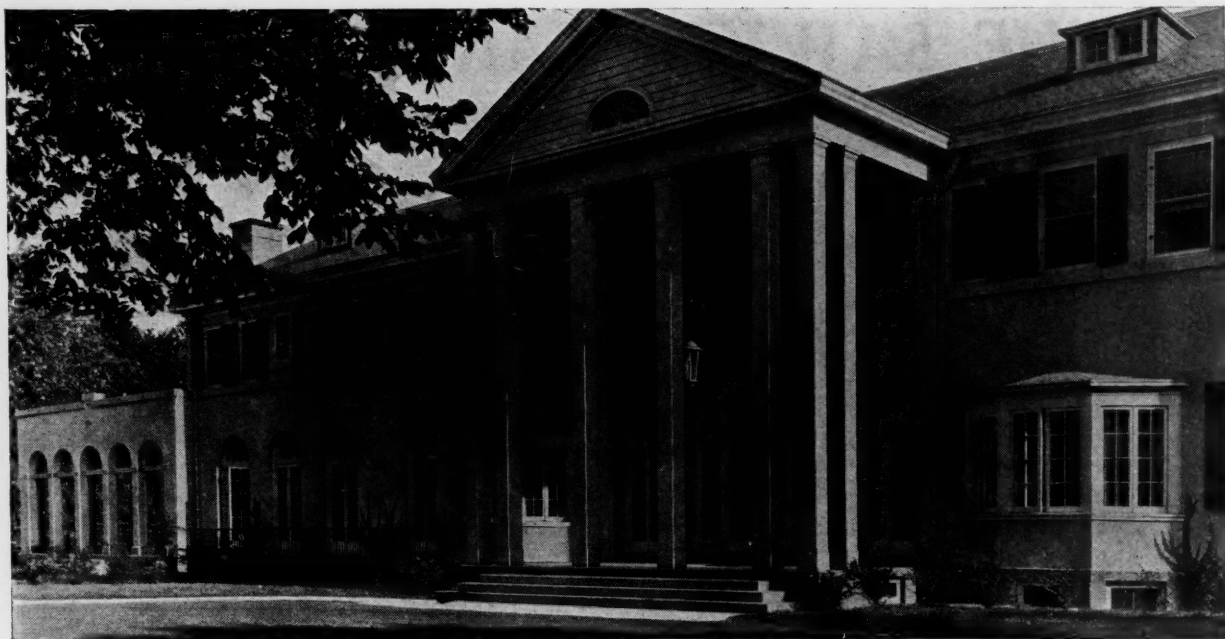
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Vol. XXIII.

GRAND RAPIDS, MICHIGAN, JANUARY, 1924

No. 1

### *Original Articles*

#### IMPRESSIONS OF EUROPEAN PROCTOLOGY\*

LOUIS J. HIRSCHMAN, M. D., F. A. C. S.

DETROIT, MICH.

In former years there was a steady stream of American physicians flowing into European medical centers seeking the latest developments in all branches of medical and surgical science. The World War, necessarily, interfered with post-graduate pilgrimages to Europe and medical practitioners were more or less forced to seek special training in their own country. In other words, they were compelled at least, in medical education, to "See America First."

Certain European medical centers stand out from others in the variety and excellence of clinical teaching available along certain special lines. Vienna, Berlin, Paris, Turin, Berne, Edinburgh, Leeds and London are centers which are most frequently visited by American practitioners who have definite special medical education in mind. From the Proctologist's standpoint, London is the "Mecca" on account of the fact that there are two special hospitals located there devoted exclusively to the treatment of diseases of the colon and rectum.

In a number of the large general hospitals the medical and surgical treatment of diseases of the large and small intestine are treated in separate services. It is an interesting fact, but on the whole a natural development, that all of the leaders in surgery of the intestinal tract, particularly of the colon and rectum, have been evolved from general surgeons. On inquiry, they have unanimously stated that on account of the amount of material presented in their hospital services with its constant effect on their knowledge of proctologic disease and the improvement in their technique they have been forced to limit their work largely to this special field.

St. Mark's Hospital, for the treatment of the diseases of the rectum and colon, is now

nearly 100 years old, while Gordon Hospital, while not of such ancient lineage, is also devoted entirely to proctologic work.

The number of patients who consult the clinics at these hospitals is enormous and indicates clearly the desire of the public for specialized attention along this line. Preying upon the credulity of the people are advertising quacks, irregular practitioners and charlatans such as we have unfortunately as well in this country.

State medicine, with its iniquitous panel system in Great Britain, makes for lessened individual interest in the patient and less efficient professional care. The personal contact is practically lost. Patients who are insufficiently cared for soon become disgusted and they become easy prey for the illegitimate and advertising practitioners. After unfortunate experiences in this regard, they flock to the special clinics devoted to proctology and form a not inconsiderable proportion of the patients treated.

European patients, as is well known are much more easily controlled in the clinics and hospitals, therefore, various methods of treatment can be completely carried out and more definite deductions made therefrom.

On account of the well known conservatism of the British professional men, many of the advances and refinements in the specialty of Proctology have been very slowly and sparingly adopted. This fact is one of the most striking things with which the American Proctologist comes in contact.

General Anesthesia is used almost universally and chloroform fully as often, if not more so, than ether. Gas and oxygen and spinal anesthesia have begun to be employed in a few of the clinics since the war, while local anesthesia is used only recently and by some of the younger men who have seen its use principally by American and French surgeons in army hospitals.

Two years ago the author was honored by an invitation to address the Proctologic Section of the British Medical Association at its session at Newcastle-On-Tyne. At that time the subject of the surgical treatment of internal hemorrhoids was taken up with special reference

\*Presented before Section on Surgery, M. S. M. S., Grand Rapids, September, 1923.

R. M.



to the use of local anesthesia. A lively discussion ensued and grave doubts were expressed by some of the British surgeons of the possibility of securing anesthesia of the ano-rectal region. But two or three of those present had employed it and only one really understood the technique, but he was enthusiastic.

Various methods of operating for hemorrhoids were discussed and the only thing on which there was an unanimity of opinion was that the Whitehead operation had no place in proctologic surgery. In fact, the chairman of the section, in his closing remarks made this statement: "Gentlemen, this meeting will go down into history as the time and place at which the obsequies of the Whitehead operation were performed."

Most of the British surgeons are still using the old ligature operation and using linen for the purpose. As a result, they have sloughing discharging wounds with which to deal and prolonged hospitalization and convalescence. A very few still use the clamp and cautery. The excision operation is comparatively new to them but some of the younger men are now using it.

They still use general anesthesia and divulsion for the treatment of fissure and wonder at the occasional case of incontinence following this treatment.

Fistulas, particularly the complete variety, are treated by incision or wide excision and followed until recently, by the persistent packing which so many general surgeons still employ in this country. Recently, however, some of them have begun to see the light and are not packing any longer. American proctologists ceased packing fistulas over a decade ago, but, as has been said above, our friends across the sea are very slow to change their methods, and especially to adopt ours.

In the treatment of the various infections of the colon, they are using appendicostomy, cecostomy, and colostomy for physiologic rest and irrigation as we are doing in this country. They have many more cases of amoebic dysentery and allied conditions than we do in America as many of their cases have returned from Britain's tropical possessions.

It is in the treatment of cancer of the rectum, sigmoid and colon, that the British proctologist excels. He is far more radical than the American confrere, and his percentage of course after five years is much higher.

On account of the better control over his clinical patients the British proctologist can carry out the indicated measures much better than we can. Practically all of the surgeons who are doing this work are removing the entire colon from the anus upward to eight or more inches

beyond the growth in every case of malignancy. There is no thought of preserving the sphincters, and every case must necessarily have a permanent abdominal anus.

The abdomino-perineal operation is used by the majority of surgeons and the Kraske operation has been discarded as was the Whitehead operation for hemorrhoids as dangerous, mutilating and highly unsatisfactory. Most of the surgeons first performed a preliminary colostomy. Where a perineal excision is performed spinal anesthesia is employed in some clinics very successfully. In others, gas oxygen is combined with spinal anesthesia.

The reason given for the sacrifice of the normal anal outlet is the fact that the extension of the malignant process is just as wide in the downward direction as the upward. The sphincter and levator and muscles very soon become involved and are already diseased before any induration can be detected on examination.

The operative mortality following the very extensive operation for excision of colonic cancer in the London Clinics is gradually improving and the number of reports of cures after a five year period is increasing with improved technique. While they have not made the rapid advances in the surgery of hemorrhoids, fistula and fissure, nor have they developed the technique and use of local anesthesia as have the Americans, their work in the surgical treatment of cancer stands out as an example of what specialized surgery in a large special clinic can do. In conjunction with the pre- and post-operative employment of radiotherapy the prospect of those unfortunates who are afflicted with intestinal cancer, no matter in what part of the bowel the growth is located as a result of the brilliant work of our British colleagues, grows more hopeful.

Our friends across the seas have much to teach us in the study of pathology, bacteriology and their kindred sciences, and in certain branches of surgery they possess world mastery, but in the surgery of the lower bowel especially, until they overcome their natural conservatism, American proctology will continue to excel on account of its simplicity of technique, the American inventive genius and the wide spread recognition in this country of the field of usefulness and the technique of local anesthesia.

#### DISCUSSION

DR. FRANK A. VOTEY, Grand Rapids, Mich.: I think the paper of Dr. Hirschman's is very interesting, especially to us who are doing work in this country which compares very favorably with that abroad. I believe in local anesthesia. There is one trouble I find with my patients, that every patient expects a cure for all time. They may go to an internist and expect to go again and again, but when they go to a proctologist they expect a cure and never to come back. We have got to educate



them to that point of view that we cannot cure them, we cannot make them better than nature made them in the first place.

We are not doing very much in the study of the reflexes of the rectum. I do not think there has been as much done as we should do. From what I read they are not doing so much in the old country. It is certainly interesting to know it is being done.

DR. L. J. HIRSCHMAN, Detroit, Mich., (closing): I did not really expect any one to discuss the paper. It is really needed because so many people who wish to take up post-graduate work ask me what they are doing abroad. Dr. Votey brought up the point about the dissatisfaction among the people in proctologic work. I did not quite get his point because I think a patient cured from any operation is cured and there is no cause for him to come back. I understand things might be a very little different in this part of the state because the propaganda has gone out among some people that every patient who is treated by a proctologist must be guaranteed a cure for the rest of his life. I think this specialty the prospect of cure is as high as in any other specialty except where the diseased tissue has been removed and cannot come back.

As far as the reflex is concerned, that is something that every one is working on.

## THE VALUE OF ENTEROSTOMY

C. D. BROOKS, M. D., and W. R. CLINTON  
DETROIT, MICH.

In cases of post-operative ileus, in late cases of intestinal obstruction, and also at the time of resection of small or large intestine, enterostomy is a life-saving and rational procedure.

This procedure was first successfully employed by Naletton, in 1858. The old procedure was to open the first distended loop which presented in the incision.

Victor Bonney first selected the jejunum for the site of an enterostomy, as the upper jejunum contains the highly toxic fluid. This has been verified by a number of investigators.

*Technic*—The location of the enterostomy is selected according to the demands of the case in hand. A point is selected on the wall of the intestine opposite the mesenteric attachment. The loop is emptied and rubber clamps or gauze pads are applied, in order to diminish the fecal content. A fine purse-string catgut suture is inserted, the bowel punctured, a No. 8 to No. 12 rubber catheter with several fenestrations in the side is inserted into the lumen, purse string tied, and the suture is passed through the tube, tied and cut. The catheter is depressed along the long axis of the bowel, and three to five Lambert sutures are placed over the tube, uniting the serous surfaces over it. The depression of the tube into the bowel wall for an inch to an inch and a half insures against leakage and future fistula. After completion of the enterostomy, the catheter is

drawn out through an opening in the omentum. The catheter may be opened at will, and should be irrigated every one to two hours, to be sure that it is patent. The cat-gut sutures usually absorb, in from five to eight days, and the catheter can be easily withdrawn.

Perhaps enterostomy is performed more frequently in cases of malignancy of the large bowel, than for any other class of cases. It can be performed as a preliminary step to a resection or an anastomosis, or may be performed as a safety-valve above the site of anastomosis. This diminishes the distension, nausea and vomiting, following the paresis of the intestine at the site of anastomosis. The enterostomy may be used for both drainage and nutritional purposes. At this time I wish to cite the case of Mr. C, age 35, diagnosis August, 1917, adeno-carcinoma of the splenic flexure of the colon with marked obstruction. We performed cecostomy, 10 days later, resection of the splenic flexure and a lateral anastomosis of the transverse colon with the descending colon, and after a period of two weeks closed the cecostomy. Examination of this man September 5, 1923, showed him to be in very good health. Bismuth enema showed practically normal contour and no dilatation or retention and no organic lesion of the large intestine.

In post-operative obstruction and in cases of paralytic ileus, we have all seen the beneficial results of early enterostomy. If, after repeated emptying of the stomach and one or two high enemas we have persistent distention of the abdomen, we believe that enterostomy is indicated. The former incision may be opened, and if the patient is in fair condition, some of the adhesions may be freed, and enterostomy performed. It may be necessary to open two or more loops of intestine in order to obtain one that will function permanently. In later cases it is often advisable to perform a high jejunostomy through a separate incision, under local anesthesia. These patients should then receive large quantities of saline, interstitially, and sufficient doses of morphine to keep the patient very quiet. The stomach should also be emptied every two or three hours regardless of nausea or vomiting.

Let us digress for a few minutes and look back to the early days of operations for appendicitis. Most of the patients who survived the attack developed an abscess in the lower right quadrant. This abscess was drained by the surgeon, and many cases developed fecal fistulas while many made good recoveries.

Surgery and diagnosis of appendicitis progressed, and most surgeons then began to search for and remove the gangrenous appendix and drain the abdominal cavity. Sometimes the

bases of the appendixes were ligated and sometimes inverted. Some of these cases after two or three days of rather stormy convalescence, attended by pain, distention, nausea and vomiting developed a fecal fistula, in other words the ligature at the base of the appendix gave way and immediately the surgeon felt relieved, as the patient would probably recover.

Here we wish to suggest, and for the last few years have practiced, cecostomy in the gangrenous cases with peritonitis. We remove the appendix in the usual manner, and insert a catheter with two or more fenestrations, into the cecum, place two purse-string sutures above the base, and invert the stump and tube the same as in a cholecystostomy. If we find at the time of operation diffuse peritonitis, with the resulting distention of the small intestine, or plastic exudate between the loop of the intestine we do an enterostomy in the ileum as well. If possible we bring the ileal tube through an opening in the omentum.

The abdominal cavity is drained in the usual manner. All cases in which we have performed enterostomy receive a small daily enema to safeguard sedimentation and impaction in the lower bowel.

In cases of intestinal obstruction due to volvulus, adhesive bands, foreign bodies, or tumors of the small intestine, when the obstruction is relieved, and we find that the intestine is markedly distended and atonic, or if a resection is necessary, we make a practice of doing an enterostomy. In this connection I would like to report the case of Mr. S., 26 years old, who was wounded in France and had an exploratory left abdominal incision, and then a left nephrectomy. He came to Harper Hospital September 26, 1922, four days after the onset of symptoms of acute intestinal obstruction. We performed a laparotomy and freed the adhesions of three loops of bowel, from the whole length of the former incision. We did three enterostomies, needless to say that he was very ill for the next 10 days, and his recovery was doubtful. He received 17 hypodermoclyses, totaling 35,000 cc's of saline, he had 24 gastric lavages. Two weeks later we closed the one remaining fecal fistula, and he went on to good recovery. We would also like to mention a case of hyperplastic tuberculosis of the ileum, with acute obstruction. We performed resection, end to end anastomosis, and ileostomy above the site of anastomosis, and this patient's fistula closed three days after removal of the enterostomy tube. She has made a very good recovery.

Many cases of inoperable carcinoma of the rectum and sigmoid can be relieved and made much more comfortable and their lives considerably lengthened by suitable enterostomy

and treatment of the local growth with radium followed by deep X-ray therapy.

Summary of cases on whom we performed enterostomy, 1920 to August 31, 1923:

Post-operative Peritonitis and Ileus:

Total No. of cases.....15

Recoveries ..... 7

General Peritonitis secondary to Appendicitis:

Total No. of cases.....27

Recoveries .....17

Intestinal obstruction:

(a) Volvulus, Bands, Tumors, etc.:

Traumatic No. of cases.....13

Recoveries ..... 8

(b) Carcinoma of Large Intestine:

Total No. of cases..... 5

Recoveries ..... 2

#### CONCLUSIONS

1. That enterostomy as preliminary step to or at the time of resection of large or small intestine is rational procedure.

2. That early diagnosis and enterostomy in post-operative peritonitis and ileus will save at least 50 per cent of these patients who would otherwise succumb.

3. Suggest cecostomy and enterostomy in late appendix cases with peritonitis, at the time of primary operation.

4. The majority of enterostomies by Wietzel Method will heal automatically.

Collective papers of the Mayo Clinic, 1922. Articles by C. H. Mayo, E. Starr Judd, and H. W. Rankin.

## REPORT OF A CASE OF HENOC'S PURPURA\*

W. C. C. COLE, M. D.

DETROIT, MICH.

I have for presentation a case of Henoch's purpura which has recently come under my observation.

Henoch first described this disease in detail in 1874, and Osler in 1914 has summarized our knowledge of the up to date.

The etiology of the condition is entirely unknown, but from its frequent association with anaphylactic and infectious phenomena these are generally assumed to be causative factors. Whether the lesions are produced by changes in the blood vessel walls from toxic causes, or whether mechanical factors are responsible for the exudations, is not known. The coagulatory properties of the blood, including the platelets, are normal, as distinct from the picture in purpura hemorrhagica. In addition to the lesions in the skin, viscera, eyes, and nervous system found in other types of

\*Presented before Section on Pediatrics, M. S. M. S., Grand Rapids, September, 1923.

idiopathic purpura, gastro-intestinal crises are an outstanding feature of the type under discussion.

The skin manifestation are of four types: first, purpura, which may vary widely in its appearance and distribution; second, urticarial wheals and swellings; third, erythema of various forms, including erythema multiforme; and fourth, areas of necrosis. It is typical of the symptoms to recur at irregular intervals over periods of months or years, and to vary in their morphology in different attacks.

Visceral lesions are due either to the formation of exudates in some organ or to inflammatory phenomena such as, nephritis, endocarditis, pleurisy, pericarditis, etc.

The gastro-intestinal crises are marked by attacks of colic which may occur at intervals over a period of years, with or without skin manifestations. Osler gives the following description of the attacks, "They may be transient, lasting only a few minutes, but recurring several times during the course of the day. They may be of great severity, causing the patient to writhe in bed. They occur most frequently at night. The attacks are independent of diet. In protracted cases the colic may not appear for a couple months and then be very severe. The position of the pain is usually central, and may radiate to all parts. Very often the child can not locate it accurately. The abdomen is usually flat, not tender, and without muscle spasm, although there may be some tenderness along the transverse colon.

Vomiting is frequently associated with the pain, and may be severe enough to cause bleeding. In some cases vomiting is the chief symptom.

Diarrhea is less common but may be severe and almost entirely bloody. Such cases when associated with colic and vomiting may be very difficult to distinguish from intussusception.

#### CASE REPORT

The case which I have to present is that of a female child who was born in January, 1919, and who is now four and one-half years old. She has been under my observation for a little over two years. The family history contains nothing of interest except that an older sister died of tubercular meningitis three years ago. There is one child younger who is well. She was born normally at full term, but had an occult spina bifida which resulted in clubbing of the left foot and some sphincter weakness. Her early feeding was very difficult and at one year she was very small, under weight and blue. She has always had an ungovernable temper and has frequent tantrums and irrational outbursts.

In May, 1922, the patient had an attack of acute pyelitis. While recovering from this she was taken with measles followed by a severe recrudescence of the pyelitis. The pyelitis did not respond to treatment, the temperature became septic, and tenderness appeared over the right kidney region. In the middle of June, 1922, Dr. Plaggemeyer removed

the right kidney, which at operation was a mass of abscesses. She made a good recovery from this operation and has had a normal urine ever since. The function of the remaining kidney is good, as indicated by the usual functional tests.

In August, 1922, she had her tonsils removed and, following this, was well until January 1, 1923. When seen at that time her parents stated that she had been having unexplained fever for about one week. The temperature rose to about 99.8 by mouth every day, but there were no other symptoms aside from irritability and poor appetite. An exhaustive examination at this time revealed nothing except a pericardial effusion of moderate degree. This diagnosis was confirmed by X-ray as well as by clinical examination. After three weeks in bed this had disappeared and the temperature became normal. From this time until June of this year nothing of importance occurred. The patient gained steadily in weight, had a good appetite, and seemed to be quite a normal child except for the occasional attacks of temper referred to above. It is, however, to be noted that evanescent blotchy erythematous patches have frequently been observed on her face and neck for some time, but until recently had not been taken as indicative of anything.

She was seen on June 20 with an attack of high fever and a rash resembling rubella. These symptoms disappeared over night and she left a day or two later for the north. Soon after arriving there, black and blue spots appeared on various portions of her body, especially on the extremities and back and about the wound from her kidney operation. Her temperature again became elevated, running from normal to 100, but never being normal in the later part of the day. Fresh purpuric spots appeared nearly every day for about three weeks. They then ceased to appear and gradually cleared up. The temperature, however, has remained elevated throughout. During this purpuric attack she was eating and sleeping well, and aside from being somewhat pale and lacking in energy, she seemed well.

About ten days after the purpura had disappeared she awakened from her sleep one night, screaming with abdominal pain. This attack lasted for over an hour and nothing could be done to relieve it. A physician who saw the child during this attack, could find no cause for the pain. Following this, milder, similar ones occurred every few days until early in August, when she again had a violent attack, which lasted nearly all night. This caused them to return to Detroit, where they again came under direct observation. Since then she has been seen in one attack and there have been a few mild ones which have not been observed. The attack seen came on about one-half hour after going to bed. It was not in any way related to her diet or the condition of her bowels. The pain was located between the umbilicus and the pubes. The abdomen was flat, and there was no evidence of tenderness or muscle spasm. Vomiting occurred at the height of the attack.

Since then we have completely examined the patient from every point of view. Tuberculosis has been ruled out by repeated skin tests, X-ray, absence of physical signs, and by the fact that the patient gains steadily in weight in spite of the continued fever. The blood shows normal coagulatory properties, but the white cells number between twelve and thirteen thousand with a preponderance of lymphocytes and a basophilia of 8 per cent. The Wassermann reaction has twice been negative. The Widal tests were all negative and a blood culture showed no growth after five days. A complete stool examination the morning after a severe at-



tack showed nothing abnormal. The urine has been normal on frequent examination.

In considering the case and looking back over the history, I have made a diagnosis of Henoch's purpura and feel that the attack of pericarditis last winter and the blochy erythema that has been observed from time to time, were probably early manifestations of this condition. Certainly the nervous symptoms which the child presents are in accord with those frequently described as being associated with this disease. I have also wondered whether or not the kidney lesion a year ago might not have been associated with this trouble either as cause or effect.

The patient has had no symptoms now for about two weeks. She is receiving no treatment, gets a full diet, and is permitted moderate exercise.

The prognosis is of course guarded, our chief fear being the development of a serious visceral lesion, particularly of the single remaining kidney.

## THE TREATMENT OF ACUTE VOMITING IN INFANTS AND CHILDREN

DAVID J. LEVY, M. D.  
DETROIT, MICH.

Vomiting is one of the most frequent and annoying symptoms encountered in infancy and childhood, and at the same time, one most likely to be followed by serious consequences. The immediate effects of severe or uncontrolled vomiting are starvation, acidosis and dehydration. A prolonged hunger period in infancy is always undesirable and in undernourished infants a source of danger. A rational therapy of vomiting then, involves the reduction to a minimum of the hunger period, the offsetting or neutralizing of acidosis, and the prevention or compensation of the loss of water from the tissues. It is the object of this paper briefly to discuss measures directed to these ends, avoiding, however, the discussion of the control of such etiological factors as cerebral or meningeal irritation, gastric or intestinal obstruction, etc.

In mild instances of vomiting due to obvious dietary fault, the removal of the cause and the restriction of the diet to skimmed milk or thick gruel, or both, for a brief period, ordinarily suffices. Eliminatory measures should be limited to a simple enema or, if tolerated, to a moderate dose of milk of magnesia. Active purgation by such drugs as castor oil—which is tolerated poorly enough by a normally behaving stomach and often induces vomiting in a healthy child—is distinctly contraindicated,

as is most assuredly the other frequently used cathartic—calomel. Not only may these agents serve as further gastric irritants, but by the production of watery stools, initiate or increase the untoward condition of dehydration. As a routine procedure then in acute vomiting—provided careful abdominal palpation has eliminated appendicitis as the causative factor—a simple enema may be employed, and other than mild catharsis is distinctly to be avoided.

Within recent years, Sauer, Langley Porter, Mixsell, the writer and others have advocated the use of thick cereal gruels in the non-surgical treatment of pyloric obstruction, and a therapy based on the methods therein involved has proven highly satisfactory in the treatment of the acute vomiting, in general, of infants and children. Briefly, the method is one of administration of thick gruel with definite sugar admixture, beginning with frequent small quantities and increasing gradually and according to indications, both the quantity and the interval.

A thick gruel is prepared of the following:

Skimmed milk, 8 ounces  
Water, 8 ounces  
Farina, 3 tablespoonfuls  
Granulated sugar, 2 tablespoonfuls

and is cooked in a double boiler for one hour. This formula is merely illustrative and various modifications may be employed. The vomiting child is administered one teaspoonful of the mixture and if retained, a half hour is allowed to elapse and another teaspoonful is given him. If this is retained, after a further period of one hour, a tablespoonful is offered and at the end of another hour, an ounce. After a further period of two hours, provided these previous quantities have not been vomited, two ounces are administered and, after another interval of three hours, three ounces are given. As vomiting ceases, certain of the gruel feedings are replaced by increasing quantities of boiled skimmed milk which serves as an intermediate step to the resuming of the child's normal regimen. With older children skimmed milk also, and thin strips of stale bread well toasted, with tea or broth, may serve as intermediate measures toward resuming the normal diet.

If, after administering the gruel the vomiting persists or recurs, a variable interval is allowed to elapse and the feeding is resumed again as at the outset, beginning with one teaspoonful or more according to the indication. If the vomiting continues to persist, it is well to wait then until all vomiting has ceased, avoiding any fluid or feeding by mouth, introducing fluid only by the routes to be discussed. When the stomach has been quiescent for six hours the procedure may be begun again. In the major-

\*Read before Section on Pediatrics, M. S. M. S., Grand Rapids, September, 1923.

ity of instances after a rest of this duration, the condition is susceptible of control and further delay, which may be harmful, should be avoided.

At the same time that the gruel is being administered, a sugar solution is prepared, approximately 5 per cent in strength. For practical purposes, one may tell the mother to add three teaspoonfuls of granulated sugar to a glass of water. The child is allowed to sip this sugar solution or drink it as freely as the condition of his stomach permits. At the same time, a counter irritant may be applied to the stomach region in the form of a small hot mustard paste which is allowed to remain only long enough to produce reddening of the skin.

If the sugar solution is not retained by mouth or if the water loss is extensive, the fluid may be administered by rectum, intravenously, subcutaneously or intraperitoneally. May I suggest that the Murphy drip is often a source of irritation to the child and often difficult to the attendants. I have found it preferable to instill into the child's rectum, an ounce of a 5 per cent solution every hour by means of a funnel and a No. 14 or 16F catheter, employing 10 minutes for the administration of this quantity. This ordinarily results in retention without producing irritation of the bowel. While ordinarily the subcutaneously injected fluid may consist of a saline solution, still one may add glucose to the fluid with beneficial effects. Only under few other circumstances does one encounter more pronounced and sudden water loss from the tissues than in the case of acute vomiting. The result of a single administration of subcutaneous fluid in severe vomiting cases is often striking, and in many instances, the turning point toward recovery of the child seems to date from this procedure. In cases of exceptional severity, where the acidosis is extreme, recourse may be had to intravenous administration of the fluid. This is often a difficult and sometimes a severe procedure and fortunately is necessary only in a small percentage of cases. Where the technical difficulty of intravenous administration is insurmountable, the intraperitoneal route may be employed. Although I believe that the first enthusiasm with which the intraperitoneal route in the administration of fluids to infants and young children was received, is properly being replaced by a certain degree of conservatism, still this method of procedure is valuable and should be employed as a life saving measure where indicated.

The rationale of the foregoing is obvious. In the first place, one starts in immediately with the administration of small quantities of food, thereby minimizing the starvation period which

is so consequential in many instances. One proceeds on the principle that it is better for the patient to receive a small quantity of food and retain it than to receive a larger quantity of food and lose it. The thick gruel forms a colloidal mass in the stomach and tends, by virtue of this property, to protect the gastric mucosa. The carbohydrate has a direct action in offsetting the existing or imminent acidosis, aiding in the meanwhile, the water retention in the tissues which latter action is supplemented by the administration of a carbohydrate solution by one of the procedures heretofore suggested.

The method which I am here briefly outlining and advocating includes the avoidance of drugs by mouth except where special indications exist, and notably among the drugs excluded is sodium bicarbonate. It is questionable if sodium bicarbonate has the effect attributed to it, and if its exhibition may not be attended by untoward results. Certainly in routine cases, its employment may be dispensed with and the desired end accomplished by glucose administration. I have seen several instances of grave symptoms, including cyanosis, air hunger and carpopedal spasm, which I have attributed to over-alkalinization with the bicarbonate. If the latter is used, the quantity to be given should be definitely controlled by testing the reaction of the urine, to prevent over-dosage with resultant alkalosis.

Where persistent vomiting or ineffectual retching occurs, lavage of the stomach with a saline or mildly alkaline solution may be advantageously employed. This procedure, while simple, is only infrequently, however, necessary.

In the case of acute vomiting in the breast fed infant, it frequently is necessary only to reduce the length of the feeding and maybe to replace two or more of the feedings with small quantities of thick gruel. At times it is necessary to reduce the quantity of milk more decidedly and to proceed with smaller and gradually increasing measured doses of breast milk. Sugar solutions should be administered by mouth, and if severe effects of the vomiting are present, such further procedures are indicated, as in the case of artificially fed infants.

When vomiting is accompanied by diarrhoea, the use of gruel and the oral and rectal administration of sugar solutions, is inapplicable. In such instances, however, one employs undiluted boiled skimmed milk and proceeds with the administration of small doses, beginning as with the cereal, with one dram, gradually increasing the quantity and the interval precisely as in the case of the gruel administration. Here one must proceed cautiously, if at all, with sugar solutions by mouth. The rectal

route, of course, is excluded, and if acidosis or dehydration are present or at all imminent, one of the other routes suggested, should forthwith be employed.

Numerous methods exist for the treatment of acute vomiting. The foregoing is outlined merely as embodying the several principles which should form the basis of any rational therapy—(a) the avoidance of an unnecessarily prolonged hunger period; (b) the administration of carbohydrates; (c) the avoidance of irritating and dehydrating cathartics; (d) the replacement of the fluid loss of the body tissues; and (e) the non use, or discrete use, of sodium bicarbonate.

#### DISCUSSION

DR. HESS: I would like to ask Dr. Levy about the use of atropin in some of these cases.

I think this is a very instructive paper, but there is one point the doctor did not bring out that I had thought of, and I think we must not forget, viz., the environment of the baby. So commonly we find a child about four months of age, on the breast, and the mother commences to menstruate. No one knows what happens to her milk during the first two or three days of menstruation; but we do know that the baby commences to cry a great deal. Consequently the mother begins to rock, wheel, and shimmy with this baby and it is put through all kinds of physical gymnastics and in a day or two the baby begins to vomit; the more it vomits the hungrier it gets; the hungrier it gets the more crying it does and the more crying it does the more rocking it gets. Then you have the vicious circle. A consideration of the environment of the baby would indicate that a little physical rest will often stop vomiting without any medical treatment.

DR. KAY: There are two points upon which I should like to offer very hearty concurrence with the opinion of Dr. Levy. One is the administration of glucose solution by injection in doses of an ounce or two ounces at intervals of one to two hours. I have entirely discarded the use of the Murphy drip. The ease of administration of a dose of an ounce or two ounces at one injection, every hour or two hours, I think greatly recommends itself.

The other point is the use of a lavage. In hospital service where one sees rather a large number of cases, they must be struck by the ease with which a lavage can be done and the efficacy of the procedure.

Just one other point I would like to touch upon—I don't know whether Dr. Levy has said anything about it because I did not hear all that he said—that is the curing of babies of vomiting by the administration of a certain drug which was brought to our attention by Dr. Marfan, the French discoverer. The administration of mercury stops babies from vomiting who cannot be stopped in any other way. He very conclusively showed that persistent vomiters can be stopped.

DR. KEMPTON: We always enjoy Dr. Levy's contributions to our Society because he always has something practical to give us. I am wondering if he would tell us what his experience has been in the use of Dryco, or dry milk, in vomiting babies, especially after the acute symptoms have been taken care of by his carbohydrates.

DR. MINER: I should like to enquire regarding the use of albumen milk or lactic acid milk.

DR. LEVY (closing): In regard to the use of albumen milk and lactic acid milk, I think they

both are distinctly indicated in cases where diarrhoea accompanies the vomiting. So far as their employment in simple vomiting cases, without diarrhoea, I doubt if they have any added advantage. Where the other condition exists, however, and one wants to influence the intestinal flora to bring about the constipating effect of the protein substance, certainly albumen milk or lactic acid milk would have a decided indication and would probably be preferable to the plain skimmed milk.

In regard to the use of atropin, I have not used it in vomiting cases at all, and I tried to make the point in this paper that it was desirable in vomiting cases to avoid the use of drugs. I did at one time, however, use novocain in the vomiting due to pyloric spasms; but two years ago I ran across a case of an infant with an idiosyncrasy, apparently, against novocain and the child very nearly died under its administration. At any rate, the condition was very alarming, and I discontinued the use of novocain in that class of cases, and I don't know but what the cases get along fully as well without it.

As I say, atropin might be indicated in spastic cases of vomiting due to pyloric spasm, or pyloric stenosis, but I believe in acute cases drugs are not retained in sufficient quantities or in a sufficient degree, rather, to produce the local effect which is necessary for their physiological action. I have had no experience whatsoever with the use of mercury in these cases.

#### ACRODYNIA\*

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The writer is aware of the probable inaccuracy of this title for the disease syndrome under discussion. But, as this term is used in over half the references encountered, and as no unanimity is found among the other writers as to a proper designation, it may be well to call the disease "Acrodynia" until more is known of its true etiology and pathology, when the proper term will be forthcoming. Other names used are "The Pink Disease," "Beef Hands and Feet," "Erythroedema," "Pellagra - Acrodynia(?)," "Dermato-Polynsuritis" and "Polynuritis Affection Resembling Acrodynia."

#### HISTORY

In April, 1920, a paper (1) was read by Dr. Wm. Weston, of Columbia, S. C., before the Pediatric Section of the American Medical Association at New Orleans, describing, for the first time in this country, a disease occurring in infants and young children, under title of Acrodynia. The paper was based on a series of eight case histories, written by Dr. Jos. B. Bilderback of Portland, Ore. (to whom belongs the credit of first describing the disease in this country) which were sent to Dr. John Lovett Morse, of Boston, for diagnosis. Dr. Morse, thinking the cases suggested Pellagra, referred them to Dr. Weston. To me, this is significant as indicating that up to that time the disease

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had not been recognized or described in this country.

Dr. Weston and Dr. Babcock, an authority on Pellagra, concluded that the disease was not Pellagra and considered it as most suggestive of the Paris epidemic of Acrodynia observed in 1828 to 1830. This epidemic, termed Acrodynia (painful extremities) by Chardon, attacked some 40,000 people, mainly adults, ran an a-febrile course (as a rule) of from two to four weeks, in a few cases recurring a second time. Prominent symptoms were dermatoses, especially of the palms and soles, all manner of paresthesias, acute gastro-intestinal disorders, paralyses and pareses of lower extremities and, in some, spasticities, and general anasarca. Two views are held as to the etiology of this epidemic, one, that it was a post-influenzal affection, following the pandemic which had swept the world a year or two previously; the other, that it was arsenical poisoning caused by the employment of preparations of arsenic to destroy parasites infesting the grapevines.

The next series of cases in American literature were reported in a paper by Dr. Albert H. Byfield from Dept. Pediatrics State University, Iowa, (2) in November, 1920, under title of "A Polyneuritic Syndrome Resembling Pellagra-Acrodynia(?) seen in Very Young Children." Seventeen cases are described in detail, and 13 cases occurring in Cincinnati, and sporadic cases from Omaha, Chicago, Des Moines and Detroit are referred to.

Dr. Byfield's summary of the clinical picture is as follows:

The disease picture was a complex one, the nervous system and the skin being most involved, while the respiratory tract and the digestive tract appeared to be less affected. On the part of the nervous system the changes were chiefly sensory or trophic in character. Alopecia, pulling out of the hair (trichotillomania), falling out of the teeth with only slight involvement of the gums; photophobia, and in one case double neurokeratitis; changes in the nails, and reddening of the tongue were seen. Paresthesia of the toes and feet, and of the fingers and hands was another constant and often most distressing symptom, leading the children to rub, scratch, and even chew the extremities. A diminution in cutaneous sensibility to pin-pricks was made out in some cases, but this seemed not to be a constant finding, due possibly to the difficulty of making accurate observations in individuals so young.

The reflexes were diminished in almost all cases, absent or increased in some; but the severity of the disease and the degree of loss of reflexes did not necessarily coincide. In most severe and even in the mild ones dullness and apathy, alternating with extreme restlessness and sleeplessness, and in one instance, delirium were observed. In a clear-cut case the patient would often adopt a characteristic posture, either lying on the side, rubbing the hands or feet, or crouching with the head burrowed into the pillow. In a few instances seen by me has a clinical picture of such intense wretchedness been presented.

Brown-Courtney-MacLachlan (3) include affections of the respiratory tract and Zahorsky (4) the "change in disposition and activity," among the general characteristics of the disease.

During 1921 five cases were reported by J. Cartin (5), one by Emerson (6), eight by Brown-Courtney-MacLachlan (3) in this country, and 88 by Wood (7), occurring in Australia.

Among cases reported the following year, 1922, are, one by Field (8), two by Vipond (9), one by C. M. Davis (10), two by L. N. Lindsay (11), 14 by Zahorsky (4), one by L. Porter (12), and two by Giffen (13) in America, and one by F. Parks Weber (14), and one by H. Thursfield (15) in England.

#### DIAGNOSIS

This is easy in well marked, fully developed cases, if one has the disease in mind, but in the early stages certainly would be difficult and often impossible.

In studying the published case-histories, one is struck by the long duration of the illness prior to coming under observation of the writers. In Byfield's series, for instance, the average duration being three and one-half months, with extremes of one to six months.

The early symptoms are the more or less gradual onset of irritability, restlessness, sleeplessness, loss of appetite, strength and weight. But how often this symptom group is due to other causes, such as intestinal indigestion, post-nasal infection, otitis, faulty training, effort syndrome, pyruia or bacilluria, etc.? No laboratory work has been done at this stage and whether it would guide us other than by excluding some of the above named conditions, is a question. "Grippy" catarrhal symptoms at the outset are frequent and the rectal temperature generally about 100, though it may be considerably higher. The undue duration and steady increase in severity of the above symptoms should arouse our suspicions.

From two to three weeks, up to five months, after the onset of the fretfulness, the redness, coldness, and swelling of the hands and feet appear; the anorexia, loss of strength and wasting become marked and sweats occur; the child rubs, scratches or claws at hands, feet, or general body surface, often shuns the light (burrowing head into pillow or on mother's shoulder), stops walking or sitting up, does not smile and resents attempts to amuse him, may pull at hair and teeth may loosen or fall out. A more or less generalized body rash, resembling heat rash, may come and go. Some cases show changed reflexes, enythematous lesions of nose or cheeks, deep abscess, or bullae.

## DIFFERENTIAL DIAGNOSIS

From Pellagra—By the gradual shading off of affected skin into healthy skin instead of a sharp line of demarcation, as found in pellagra; by the lesions being more marked on the palmer and planter surfaces, with no scaliness on the back of neck; by its occurrence, in some instances, in breast babies; by the absence in the history of any common dietetic factor; by the aggravation of symptoms in cold weather and no recurrence in cured cases; and by the prolonged duration of subjective symptoms, up to eight months. (Byfield.)

From Arsenic Poisoning—By lack of prolonged marked irritative gastro-intestinal symptoms and absence of arsenic in the urine.

From Post Diphtheritis Paralysis—By the preponderance of sensory disturbances and the absence of characteristic motor paralyses.

From Acroparesthesia—By occurring in infants and young children instead of in adults (usually women between 30 and 40 years of age); also, by the redness rather than the paleness of the fingers and toes.

From Erythromelalgia—Which occurs from puberty upwards, and in which the general nutrition and health is not interfered with, the hands and feet are tender, and symptoms are aggravated by warmth.

From Epidemic Encephalitis—By less severe nerve and cerebral disturbances, and no sequelae in cured cases.

## PATHOLOGY

Little is known. Post-mortem reports by Thursfield and Australian physicians throw little light on the nature or cause of the disease. The reports seen, however, do not state whether microscopic studies of the nervous systems were made. Byfield, in a case complicated by Pulmonary Tuberculosis, found "involvement of an occasional anterior horn cell, gliosis about the central canal, and edema of the sensory roots."

The blood and spinal fluid have uniformly been Wassermann negative; a leucocytosis of 12,000 to 30,000 has been found in all marked cases and both a moderate anemia and a polycythemia have been reported. The urine has shown an occasional trace of albumen and quite often an increased number of leucocytes, the latter never appearing to have an etiological relation to the disease. In metabolic studies, made by Brown-Courtney-MacLachlan, an excessive loss of nitrogen through the urine and a negative nitrogen balance, and, in one, a negative balance of bases, were found.

Vipond (9) states that a "general enlargement of all the glands of the body" occurs, but this has not been noted by other observers nor was it true in the cases herein reported. He

states that by aspirating an enlarged gland and inoculating a culture tube of fresh blood-serum, he secured a growth of Gram-positive diplococci, from which a vaccine was made that accomplished a rapid cure in his two cases.

## ETIOLOGY

Weston and others regard it as a deficiency disease, from its behavior in many respects like pellagra and scurvy, while Byfield leans to the opinion that it is of infectious origin, the view held by Brown-Courtney-MacLachlan, Field and others. In all of the cases to be reported the disease began with head colds or cough, at a time when we were seeing so many cases of so-called Influenza. In some of Byfield's cases, and in one of the writer's, marked improvement followed removal of foci of infection from throat and nose. The thought that an infection causes the early prolonged symptoms, during which little food of any kind is taken for weeks or months, resulting either in a deficiency disease alone, or, in a lowered state of nutrition making the nerve structures more vulnerable to toxins of infections, seemed plausible to me until cases were encountered in which the food intake was little affected. It is logical to expect that when the etiology is definitely ascertained it will be made clear why these cases occur rarely (16) after six years of age. May I suggest that possibly some as yet unidentified deficiency, either of food element or internal secretion, exists in certain children up to about the sixth year, when it is outgrown; and, that some infection in this group of children causes the syndrome called Acrodynia.

## PROGNOSIS

In the great majority of cases, favorable as to ultimate complete recovery, but frequently dragging along for from four to eight months with periods of partial remission alternating with exacerbation.

However, in 91 cases collected by Wood and Cole in Australia, there were five deaths; in Byfield's series of 17, three deaths; in Zahorsky's series, two deaths; C. M. Davis, one death—all due to complications, pneumonia being the most frequent.

## TREATMENT

Is supportive and symptomatic and may be summarized as follows:

(1) Local applications to allay the intolerable skin irritation; drugs, when needed, to promote sleep and rest, and as tonics.

(2) Removal of any foci of infection, when indicated.

(3) General hygienic measures—sun-light, fresh air, complete diet, forced feeding if necessary.

(4) Possibly, administration of vaccines made from gland puncture, as advocated by Vipond.

## CASE REPORTS

Case 1.—Male infant; age fourteen and one-half months. First seen June 7, 1922.

First child; birth normal; birth weight about nine pounds.

Diet—Breast, eleven and one-half months; at ten months began to add pasteurized milk, cereals, breadstuffs and orange juice to diet.

Contagion and past illness—none.

Present illness—Began eight weeks ago (first week of April, 1922), with a "cold in the head," since which has been dopey and whiney, has eaten little, been very irritable, restless and sleepless at night, and lost weight. Three weeks ago a blotchy red eruption appeared on hands and about four days later on both feet. (Impossible to get any accurate description of this eruption.) Babe would claw at reddened areas of affected skin most of the time. An ointment was ordered by a physician and in a few days the skin on backs of hands began to peel and this extended between the fingers. There also was some peeling about the toes. The hands and feet became swollen, red, cold, and moist, there were frequent sweats, an itchy red rash on the trunk and extremities was more or less constantly present, and the child kept the eyes nearly closed and avoided the light. At present takes only one pint of milk with five tablespoons of malted milk and one-half glass of orange juice daily, refusing all other food. There has been no vomiting or diarrhoea.

Physical Examination—Fairly well nourished male infant, (but skin appears "too large,") shuns the light (buries face on mother's shoulder), and has a very anxious, unhappy and worried facial expression, is very cross and irritable. Temperature 100 (rectal). weight, 20 pounds 2 ounces. Heart action rapid, regular, no murmurs or enlargement. Lungs and abdomen, normal. Cervical and inguinal glands palpable and slightly enlarged. Mouth and throat—tongue coated, ten teeth, no ulcerations, tonsils moderately enlarged and congested, pharynx red and there is a thick purulent discharge on posterior wall. Nose—moderate mucopurulent discharge. Eyes—Kept closed most of the time and turned from the light; pupils equal, moderately dilated and react to light. There is no squint.

Extremities—Feet and lower legs puffy (do not pit), cool, and bluish. Soles of feet are dusky red and there are evidences of peeling, especially between the toes. Hands show a similar condition, though less marked, and a few deep seated small flattened papules are scattered over wrists and dorsa of hands.

Patellar reflex—Left, feeble, and right is absent. Sensation—Sensitive to pin pricks.

Treatment and Course:

Diet—Milk, 24 ounces; cereals, scraped beef with bread crumbs and beef juice, egg, green vegetable mash, broth as an appetizer, whole wheat bread and butter, apple sauce and orange juice.

Medication—Scott's Emulsion (as that was the only form of Cod Liver Oil he would take), two teaspoonfuls t. i. d. Locally, Ung. Zing. Oxid. with 1 per cent Phenol and Menthol.

June 11, 1922 (four days later): Eats and sleeps better, scratches less, and keeps eyes open more. There is an indurated fluctuating swelling at base of left great toe, planter surface. Abscess opened by surgeon and large wet boric acid dressing applied.

June 13, 1922—Abscess almost cleared up. Ulceration present on outer aspect of left fourth toe; wet dressing; general condition same.

June 20, 1922—Been very restless and fretful, especially at night, sleeping poorly, and rubbing hands and feet much of the time, until last night, when he slept well. Eating better (takes almost

one quart of milk, cereals, and one-half glass of orange juice), and takes plenty of water. Mother states that he urinates but twice in 24 hours, but then q.s. Legs are less swollen, hands and feet less red and warmer. Abscess healed with scab, also ulcer of toe is scabbed. Forearms still a trifle puffy, arms thin, thighs flabby and thin. Weight, 19 pounds 13 ounces. Urine—Ac-Alb., none; Microscopic, negative. Much quieter baby, but still not normal.

July 7, 1922—Eyes wide open, takes interest in playthings, but is very irritable and fretful during the day. Sleeps well at night and takes two naps a day. Appetite fair but variable. Urinates frequently and grunts and seems distressed while doing so. Urine remains negative. Has been sweating profusely at times. Hands and feet slightly red and warm, legs very little swollen. Weight 19 pounds, 7 ounces.

July 15, 1922—Telephone report: Sleeping better, much less irritable, eating well.

July 25, 1922—Telephone report: (Six weeks since first seen and nearly four months since beginning of illness.) Happy, eating well, getting fat.

Case 2.

Male infant; age, thirteen and three-fourths months. First seen, June 24, 1922.

Second child; sister of three years alive and well; birth normal; birth weight, ten pounds.

Diet—Breast only for ten months, then modified cow's milk as supplemental feeding for one month, during which was uncomfortable and constipated (was always constipated—laxative or suppository invariably being needed.) Completely weaned at 11 months (when weighed between 22 and 23 pounds), and was put on whole milk, boiled for three minutes, one quart, with six ounces of water and four tablespoons of Dextrimaltose. Orange juice was started at age of one month for constipation.

Previous Illness—Always well, except for chronic constipation, and a happy baby until at the age of about eight and one-half months. January, 1922, had a "cold in the head" and some cough, acute for ten days, then improved, but was droopy and not completely recovered when present illness began.

Present Illness—During February, 1922, while still for the most part on the breast, he became very restless and irritable, slept little during the day and during the night would toss and turn, get on knees, and thrash about. He lost appetite, became weak and limp, and an itchy fine pimply rash appeared on body and extremities. On March 6, 1922, five days after weaning (six weeks after the "cold"), left hand became red, swollen, moist and cool. The other hand and then the feet were similarly affected within a few days. He sweat profusely, and pulled at his hair, at times, and the small papular rash came and went. Condition remained about the same until April 3, 1922, when his physician at that time sent him to a hospital (his mother was worn out with the care and sleepless nights). During the eleven days in hospital, temperature ranged from 98 to 99 4/5, nose and throat were negative for diphtheria, stool analyses showed no excess of free fat, soaps, or starch, and trace of albumen (no pus) was found in the urine. Beside notes speak of: Restlessness, sleeplessness, cold, purplish-red and puffy hands and feet which he was rubbing\* and scratching much of the time; refusal of food part of the time; profuse sweats; persistent constipation, and slight improvement on discharge. Diagnosis was "Intoxication from Food."

On return home another physician put him on a milk formula for a month and as no permanent improvement followed, took milk away altogether



and gave vegetables, egg, broth, bread and butter, custard, rice, fruit juices and apple sauce. But the baby took little food, rested very little day or night (the only way the mother could quiet him was by rubbing the soles of his feet), the condition of the hands and feet would improve for a few days or a week and then get cold, bluish-red, and swollen again. He would sweat at times and urinate frequently.

Six months after the "cold" and three and one-half months after the hands and feet became affected, the patient came under my observation.

**Physical Examination**—Pale, thin, flabby male infant, skin hanging in folds, facial expression that of great distress and weariness, attitude of utter fatigue, very irritable, resenting any attempt to amuse him. He constantly rubs at soles of feet. He does not scratch as one suffering from an intense itching, but rubs as though to relieve some less severe irritation, such as a formication or tingling of the skin. Eyes half closed and avoid the light, conjunctivae moderately injected, pupils equal and react to light. There is no nystagmus or squint. Chest normal, abdomen normal, except for masses in region of descending colon thought to be fecal masses. Left patellar reflex active, right feeble. Glands—Cervical, anterior and posterior, moderately enlarged. Mouth and throat—Tongue coated with red edge, twelve teeth, gums in good condition, no stomatitis; pharynx reddened, tonsils small, smooth and congested. Muscles soft and weak. Hands and feet are of a bluish-red color, most marked on palms and soles, slightly swollen (do not pit), and are cold. A number of small papules are present on the feet. There are papulo-erythematose lesions scattered over the wrists, forearms, ankles and lower legs. Scattered over the trunk are fine papular lesions, resembling heat rash.

Urine: Acid—Albumin, very faint trace—Sugar, none—Microscopic, negative.

Stool: Starch, normal—Free fat, normal.

**Treatment and Course:**

Diet—Lactic acid milk, cereals, vegetable mash, fruit juices, egg, whole wheat bread, butter, scraped beef, baked potato, and stewed fruits.

Syrup of the Iodid of Iron with Cod Liver Oil was ordered internally and Calamin Lotion with Phenol and Menthol locally.

Improvement was gradual, interrupted by periods of exacerbation of all symptoms (mother had to hold in arms and rub feet to induce sleep) and continued until August 1, 1922, when began to have fever, choreiform movements of extremities and head, at intervals and to urinate frequently. He made no attempt to rub at hands or feet, but would dig at body when uncovered. He lost appetite and slight dry cough developed. Seen on August 2, 1922, when temperature was 100, general appearance much improved, hands and feet slightly red, but warm, and presented no lesions nor apparent irritation. Heart and lungs normal. Tonsils congested, posterior pharyngeal wall granular and red, with thick mucopurulent material adherent. Posterior Cervical Glands were moderately enlarged, ears normal. It seemed to me that the child was suffering from a post-nasal infection, the choreiform movements and frequent urination (urine negative) being the result of the toxemia on his nervous system not yet fully stabilized and recovered from the disease under discussion.

August 25, 1922—Both hands and all fingers have been swollen, tense and red, but warm, for past 24 hours, feet normal. Swelling appeared urticarial in form and was thought due to mosquito bites. Bed was screened, Calamin and Zinc lotion applied, and condition promptly cleared.

A moderate "cold" and cough were successfully weathered in October, 1922, without any return of the distressing symptoms. Total duration in this case, between seven and eight months.

**Case Three:**

Female infant; age thirteen and three-fourths months.

First seen April 4, 1923.

Third child; other two alive and well; mother had one miscarriage at three months, one year prior to birth of this child; birth normal, weight 9 pounds 14 ounces.

Breast-fed first year and had suffered no previous illness.

**Present Illness**—Began at one year of age, January 23, 1923, three days after weaning and being put on dilutions of raw cow's milk, when she showed mild catarrhal symptoms, seemed feverish, cried hard much of the time, and was constipated. Was better the following day, but would hold breath after stridulous inspirations and remained very irritable and restless and slept poorly. Two days later a rough, itchy erythematous rash appeared on chest, front and back, and a few "spots" appeared on cheeks. Rash lasted three days. One week later, hands became red and cool and boils developed on thumb and finger. Rash on body recurred and has persisted, off and on, up to present time. Had a cold in the head three weeks ago, since which eyes have been red and sensitive to light. Has been very restless and irritable, sleeping little, scratching body and rubbing and clawing at hands and feet, for past six weeks. There has been more or less peeling of the skin of hands and feet, and constipation most of the time.

Taking 24 to 30 ounces of milk, bread and butter, and cereals up to one week ago, since which about half this amount.

**Examination**—Weight, 18 pounds 4 ounces, temperature 98 8/10, 8 teeth, all normal. Eyes are turned from light, lids trifle thickened, red, and about one-third closed; pupils react equally to light; there is no squint or nystagmus. Pulls at hair frequently. Underwear is moist. Skin loose and, on trunk and extremities, presents erythematous macular lesions and scratch marks on buttocks and thighs. Tip of nose red. Hands are warm, swollen slightly and reddened with some peeling about digits; feet about same except are cool.

**Treatment:**

Diet—Consisting of milk, egg, cereals, vegetable mash, scraped beef, stewed fruits and orange and tomato juice; Calamin lotion with Menthol and Phenol, Malt Extract with Cod Liver Oil, and a mixture of Chloral and Sod-Bromide.

**Course**—For some six weeks child grew worse; grew weaker and was unable to sit up, scratched and rubbed hands and feet a great deal, sweat profusely at intervals, could not stand the light, up every hour at night (at first the chloral and bromide helped, but soon lost its effect), ate little, urinated frequently (crying with the act at times) and hands and feet peeled until raw. The application of raw linseed oil seemed to relieve the itching of hands and feet, and healing occurred shortly.

All symptoms began to improve about May 15, 1923; began walking first week in July. When last seen, August 14, 1923, weighed 21 pounds 4 ounces, had 12 teeth, skin normal, very active and happy.

Duration of illness, about six months.

**Case Four:**

Female, age 2 years, 1 month, residing on a farm. First seen May 19, 1923.

Fourth child, others alive and well. Birth normal; birth weight 6½ pounds.

Breast-fed, 1 year, and developed normally. No

history of contagion. Had frequent "colds" and some ear-ache last winter, but ears did not discharge.

**Present Illness**—Began about middle of March, 1923, with hard cough, cold in head, slight fever and some ear-ache. Cold improved in a few days, but child remained listless and irritable and appetite failed. Two weeks later, April 1, 1923, hands became red, became slightly swollen and blisters became flat pustules. She ate very little, sweat considerably, pulled at hair, cried a great deal, avoided the light, slept poorly, buried face in pillows, and feet became affected, but to less extent than hands. The last of April, 1923, had an attack of measles—another child in the family suffered with measles at the same time. During the second week of May, 1923, the tip of the middle finger began to turn dark.

For past few days has been very feverish, greatly prostrated, taken scarcely any nourishment, urine has been very scanty, but bowels regular.

**Examination**—Lying on right side, legs drawn up, appears acutely ill, is very restless and irritable by spells. Temperature 104, pulse regular, 60. Skin, of a dusky color, moist and cool, shows a fine papulo-muscular rash distributed over trunk, sparsely on extremities. Over left cubital space is an area, half-dollar in size, of deep induration. Heart shows no murmurs or enlargement. Many moist rales are heard over both lungs and areas of slight dullness are made out over back, both sides. There is practically no cough (also noted by Zahorsky, who attributes it to insensitive lung tissue.) The hands and fingers are much swollen, red, hot to the touch and present many flat pustular lesions. The terminal phalanx of the left middle finger is dry, black and cold, with a distinct line of demarcation at distal joint. Feet are red, slightly swollen, few pustules. There is a moderate general gland enlargement. Post-pharyngeal wall is red, granular and covered with muco-purulent material. Tonsils are congested.

#### Course:

Ran an irregular high temperature with the usual symptoms of a Broncho-pneumonia plus preceding symptoms for some three weeks. Indurated area at bend of left elbow softened and was incised June 6, 1923. Pus was evacuated from as far down as the wrist.

Child slept little (only when hands were rubbed), and was very restless and irritable up to July 1, 1923, though appetite showed some improvement about June 25th.

The latter part of July, 1923, the gangrenous soft tissues separated from terminal phalanx left middle finger, leaving bone exposed. This dropped off at the joint August 1, 1923. About the same time a narrow strip of gangrenous tissue which had formed along outer aspect of left hand and thumb, separated, which on healing, left a contracture of the thumb.

Since gangrenous tissues separated, August 1, 1923, child has improved rapidly, eats and sleeps well, and is gaining flesh and strength.

August 11, 1923—**Examination**—Hands and feet are still red, but warm, and seem very sensitive to touch—will not tolerate stockings. There are still a few small pustules on right middle and little fingers.

**Duration**—Five months. Striking features in this case are the spontaneous amputation of a phalanx, and marked broncho-pneumonia with very little cough.

#### Case Five:

Female, age 20 months.

First seen, March 6, 1923.

Fifth child, others alive and well. Mother had one miscarriage at three months. Birth, normal. Birth weight, 7 pounds. Breast fed one year, then general table diet.

**Contagion**—Measles at 1 year, whooping cough at 14 months.

**Present Illness**—Began in February, 1923, with high fever, cough and head cold, fretfulness and pustular lesions of varying size on face and extremities.

When first seen she presented crusted impetiginous lesions of face and extremities—no suspicious symptoms at that time other than restlessness and insomnia, erroneously attributed by me to the extensive impetigo. She was referred to a skin clinic.

The first week in May, 1923, started with cough, slight fever, pains in head and back, was very restless day and night, and lost appetite. Soon thereafter she became very cross and irritable, kept eyes partially closed and avoided the light, pulled out tufts of hair, slept very little, rubbed and scratched hands and feet, which became red, slightly swollen and cool to the touch. Also picked and rubbed nose, which was discharging purulent material freely. Drank water in large quantities and urinated frequently day and night, no dysuria.

Entered Lucas County Hospital, May 19, 1923.

**Examination**—Well developed, fairly nourished female child, very sullen and irritable, resenting attempts to amuse her. She sits with head in hands and elbows resting on knees. Profuse purulent nasal discharge which she spreads over face by frequent picking and rubbing of nose. On nose, cheeks upper lip and chin impetiginous patches are seen. She claws at hands and feet. The fingers, hands, toes and feet are bluish-red, peeling around fingers and toes, cold and moist. Eyes half closed and she turns from the light. Pupils react to light and accommodation. There is no nystagmus or strabismus. Hair is dry and missing in large patches. Ears are discharging profusely thick, foul-smelling grayish-white pus. Teeth are fair, no ulceration. Tonsils are enlarged and pus can be expressed from left. Adenoids block naso-pharynx. Heart and lungs normal, reflexes normal. Extremities are hypersensitive, no areas of anesthesia made out. Lymph glands palpable, small and hard. Muscles are flabby. Urine, negative. Blood—Hb. 55 per cent; R. B. C. 5,800,000; W. B. C. 17,560; Poly. 72 per cent; Lymph. 25 per cent; Trans. 2 per cent; Eosin. 1 per cent; blood Wassermann, negative. Culture from ears, Diphtheroids, from mouth, staphylococci.

June 8, 1923.—Tonsils and adenoids were removed—left tonsil pus-laden. Six days later there was marked improvement in general condition, lesions on face clearing up rapidly, nasal discharge almost ceasing. Gradual improvement and left hospital July 15, 1923.

July 25, 1923, returned to Dispensary. Mother reports better for three days after leaving hospital, but past week has slept very little, scratches body surface, hands and feet much of the time, eats little, drinks a quart of water during the night, urinates frequently, sun-light hurts eyes, and sweats considerably. Skin is moist and cool, miliarial-like rash present on trunk, arms and thighs; hands and feet, cool and slightly red with slight peeling of palms and soles. Left patellar reflex active, right absent; pupils normal. Throat, red and contains excess of mucus.

All symptoms were aggravated for some two weeks when improvement began and when last seen August 15, 1923, she was greatly improved—eating and sleeping much better, interested in surroundings, skin nearly normal.

**Duration**—Up to present, 6 months.

Comment—Improvement, rapid at first, started after tonsils and adenoids were removed.

#### Case Six:

Male infant, age 10½ months. Residence on farm. Second child, other alive and well. Birth normal, birth weight 7 pounds. Breast fed entirely for four months, then, breast plus whole milk with bread and cornstarch pudding, and did well.

Present Illness—Began March 10, 1923, with a cold, cough and high temperature for eight days, when improved, but was cross, cried a great deal and did not want to play. Would sit up with head bent over between feet and sleep for a time, then lie on stomach, whiney, irritable and restless. He pulled at hair and avoided the light.

One month later, April 23, 1923, a measles-like eruption appeared on neck, back, arms, legs, and on the scalp. He would scratch until bled. Shortly afterwards hands were cool, feet colder and blue, profuse sweats occurred, passed little urine (but once a day) and slept very fitfully, whining, crying and scratching a great deal. For past week has sweat less and urine has increased. Appetite has been good, bowels constipated, cut two teeth the middle of June.

Examination—Temperature normal, weight 15 pounds 8 ounces (weighed 18 pounds at 3 months). General skin surface moist and cool. Feet cool, but show no redness, eruption or peeling. Palms of hands and palmer surface of fingers show redness, peeling and remnants of a maculo-papular rash which fades gradually at the wrist. Both genito-crural folds present large markedly thickened intertriginous lesions, similar in appearance to those of erythrasma. Irregular dark red small macular lesions are seen over lower abdomen and lumbar region of back. Mouth—Two teeth, normal; on inner surface of left cheek there is a small oval lesion resembling a mucus patch. Throat is congested, tonsils moderate size and reddened.

Reflexes, normal. Slight general glandular enlargement, posterior cervical moderately enlarged. There is no strabismus or nystagmus—turns from light and keeps eyes half closed.

#### Treatment and Course:

Breast, plus complete diet. Local soothing applications—Calamin lotion with Menthol and Phenol and a weak crude tar ointment for lesions in the groins. General sedative mixture of chloral and sodium bromide was ordered for sleeplessness, and Cod Liver Oil as a tonic.

Continued to eat well and though skin suffered recurring rashes, improvement was rapid.

On August 8, 1923, when seen again, mother reported that he cries and scratches little, sits and plays and laughs, stands, holding on. Still sweats considerably while asleep, awakens several times during the night, but quickly goes back to sleep, and shuts eyes in sun light.

Weight is 15 pounds 10 ounces. Temperature normal. Hands and feet are a trifle red and cool, no peeling. Small papular lesions over shoulders, on lower back, buttocks and thighs. Indurated mass size of pecan in anterior fold of right axilla and an ulcer at right upper corner of mouth. Lymph glands normal.

Duration—Five months to date.

#### COMMENT

In the six cases presented, all began with, or followed shortly after, inflammation of the upper respiratory tract, the date of onset being from January to April, ages varying from 10¾ months to two years, one month. There were no two cases from the same family or neigh-

borhood. Two lived on a farm, one in a village and three in the City of Toledo. Duration of illness was from three and one-half to eight months. An unusual feature was the spontaneous of a phalanx.

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#### DISCUSSION

DR. LARNED, (Grand Rapids): I feel very much indebted to Dr. Giffen for this presentation. I think it is a condition that I know in my own case went for a long time unrecognized. The striking thing about these cases to me, and the history of the cases is that practically without exception in my own experience, they are children that have been for a long time breast-fed; children that have been nursed a year or 14 months, or that give a history of having been nursed for nine or ten months and not having gained for the last two or three months off the breast; haven't had much in the line of additional food, and with it a marked loss of weight all the time before they come to your office.

The question of etiology is a very interesting thing. Whether it is infection or lowered resistance or deficiency disease is not settled. It is certainly a very interesting thing. I had one of these children that, after it started to improve somewhat, developed hemorrhagic purpura and died. I think that is the only case I have had in my experience.

DR. BLISS, (Kalamazoo): We had one of these cases last year. The interesting fact was, it was under the care of the pediatrician, on a perfectly balanced diet, in a very high-class family where all the hygienic dietetic conditions were absolutely normal.

The etiology is an important thing, but I don't see how we are going to get at it, because so few children die of acrodynia. I think, until we are able to get some history we will be unable to make a correct diagnosis.

DR. COWIE, (Ann Arbor): We have had a few cases at the University Hospital. I think—well, they follow the description that has been given by Dr. Giffen. We have recorded one or two cases, but so far as the etiology is concerned the whole



thing is up in the air at the present time. Dr. Byfield's work is most interesting. I think he rather leans to the idea of some infection being at the bottom of these cases.

CHAIRMAN COOLEY: It was my good fortune to have seen one of the few fatal cases. By the way, Byfield included this case in his list, after a personal conversation with me, but he did not get in the fact that it was fatal. It was a remarkable case in that the child actually had eaten four of its own fingers. It was not just a case of gangrene and the tissue dropping off, but the child had actually eaten the last two phalanges of four fingers and had clawed a large part of the flesh off both feet. I saw the child only two days before it died, so I didn't have much chance to make a thorough study of the conditions, but it was really a remarkable case, and the only thing that might be considered an etiological factor was an infection which evidently had been an unrecognized diphtheria shortly preceding the onset of the condition.

The others I have seen have been more or less what Dr. Giffen has described, but my impression is that it is not nearly so common in our region as it is in some others. That is why I asked Dr. Cowie about Ann Arbor. My impression is that it is not nearly so common in the region of Detroit as some of the other larger cities and surrounding territories.

DR. COWIE, (Ann Arbor): May I say another word? The cases we have had have been from outside of the state of Michigan. The first case came from Ohio, somewhere near Dayton.

I think we want to be very careful in making diagnoses of acrodynia, in those cases where the fingers drop off or where tissue comes away, and in those cases associated with suppurative process you must remember there is a differentiation between that and Raynaud's disease.

## MENSTRUATION AND ITS DISORDERS AT PUBERTY AND EARLY ADOLESCENCE\*

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This paper is presented to the Pediatric Section of the Michigan State Medical Society for the purpose of stimulating thought on prevention of the exceedingly common disorders of menstruation. The subject is a broad one and it takes years of time to prove whether or not we can prevent any of the suffering and loss of time that is apparently now necessary. But can we not in our practice of hygiene of childhood keep the maternal future of the girl in mind and perhaps by closer attention to the care of the feet, bodily mechanics, clothing, exercise, etc., assure the young woman the same comfortable existence she had in the years before puberty?

From the very earliest times the phenomenon of menstruation has been the subject of much speculation and study. The older ideas as to the nature of the menstrual process represent a curious blending of speculation and superstition, with very little foundation in real

fact. The element of mystery in the phenomenon inhibited intelligent efforts to study it. Even before the time of Hippocrates menstruation seems to have been looked upon as a cleansing process—a periodic purging of the blood from filth and impurity. Pliny spoke of menstrual blood as being a fatal poison, corrupting and decomposing urine, depriving seeds of their fecundity, destroying insects, blasting garden flowers and grasses and causing fruits to fall from their branches and dulling razors, etc., and there were beliefs even more ridiculous, with many of which you are familiar.

The really scientific study of menstruation dates from the work of Negrier, in 1832, although the twentieth century, young as it is, has yielded perhaps the most valuable information. Modern methods of scientific investigation are gradually sweeping away the mystery and superstition which has accumulated about the subject, in its passage down the folk-paths of the centuries.

Where does the menstrual blood come from? The immediate source is from the mucous membrane of the uterus above the internal os. The mucosa of the cervix plays no active part in normal menstruation. The cervical canal probably dilates slightly during the period. Herman states that it has its maximum diameter on the third and fourth days. This perhaps explains why certain cases of dysmenorrhea are apt to be relieved after the first day or two of the flow. At the present time we have not sufficient evidence to state whether the Fallopian tubes participate in the process of menstruation. They may or may not.

### PHYSIOLOGY

The older theories of the cause and mechanism of menstruation are about as bizarre as their beliefs of the process itself. Not until our recent knowledge of the internal secretions was our present idea possible. We now believe that the ovary gives forth an internal secretion which is responsible for the phenomenon. There are some who take exception to this theory, but the evidence in its favor seems quite overwhelming. The cessation of menstruation after castration, the reappearance of menstruation after successful transplantation of the ovaries, and the occasional appearance of menstruation after administration of ovarian extracts, all speak for the essential importance of the ovary in its production. There is some doubt as to which part of the ovary is responsible, but the corpus luteum seems to have the majority of the evidence in its favor. Its developmental cycle parallels the characteristic premenstrual swelling of the endometrium. The menstrual hemorrhage, however, does not occur until the in-

\*Read before Pediatric Section, M. S. M. S., Grand Rapids, September, 1923.

hibitory influence of the corpus luteum is removed by atrophy of the structure.

Although menstruation is in itself a purely physiological phenomenon, it often gives rise to much discomfort, sometimes amounting to actual disability. It is difficult to draw any sharp line between the mild subjective symptoms experienced by many women at this time and the more severe discomfort which is entitled to the designation of dysmenorrhea. In any consideration of the symptom of pain, the personal factor plays an all important part. The subject is further complicated by the well known fact that normal menstruation may occur even in the presence of the most extensive pathological conditions in the pelvis. In general it may be said that normal menstruation is not accompanied by actual pain although there is often a sense of heaviness and discomfort in the pelvis. About 68 per cent of healthy girls suffer no pain at all. The others vary from "occasional slight pain" to "occasional severe pains." About 5 per cent require rest in bed for one or more days each month. Two-thirds of the cases have the pain in the abdomen, 6 per cent in the back alone, 6 per cent in both back and front,  $5\frac{1}{2}$  per cent have pain in legs, 2.8 per cent have headache or general physical disturbance.

The remarkable regularity with which menstruation recurs throughout the sexual life of the woman is perhaps the most difficult of explanation of all the characteristics of the process. As is well known, there is in many girls a marked tendency towards irregularity for some time after the inauguration of the function. The statistics of Emmett, based upon 2447 cases, showed that in 72.3 per cent menstruation was regular from the beginning. In 18.9 per cent it became regular after a certain time, and in 8.7 per cent it was never regular. The average time required for the function to become regular when it commenced irregularly was 18 months after the first appearance.

The duration of the entire menstrual cycle in by far the largest number of women, is 28 days. A considerable number, however, menstruate regularly at intervals of 21 days, and a few every 14 days.

Much variation is seen in the duration of the flow in different women. The important fact from a practical viewpoint, is that within certain rather narrow limits every woman has her own standard by which she may judge the advent of abnormality. The average duration given by Emmett was 4.8 days, but individuals vary from one to eight days. Kelly emphasizes the fact that in those cases in which the duration was over six days the amount was described as excessive. He concludes that "a duration

of more than six days is so frequently pathologic that it should never be regarded as normal, unless the patient's health is fully up to par."

The amount of menstrual discharge is difficult to measure, hence there is a great divergence in the estimates of various authors. It is probably not far from correct to say that the average blood lost at the menstrual periods is from two to six or eight ounces, although the individual differences are great. The greater portion of blood is lost during the first half of the period.

The beginning of menstruation is usually preceded by a discharge of mucous, which may continue for several days. On the appearance of the blood, in what might be called the secondary stage, the preliminary discharge becomes gradually mixed with blood until it appears to be blood alone. In the third stage the flow disappears in a manner the reverse of its gradual appearance. In addition to blood menstrual discharge contains a greater or less amount of mucin, disquamated epithelial cells, bacteria and debris. The characteristic disagreeable odor is partly due to the decomposition of blood elements and partly to the activity of the sebaceous glands of the vulva.

Menstrual blood according to Krieger, differs from venous blood in its high water content. The serum in the former contains 93.5 per cent water while venous blood contains 90.6 per cent water. By far the most interesting characteristic of menstrual blood is its non-coagulability. The well known experiment of puncturing the tissues of the cervix during menstruation brings out sharply the difference in this respect, between the menstrual blood and that of the body generally. The blood which oozes from the puncture clots readily, while that which comes from the cervical canal remains fluid.

#### PUBERTY

Puberty is one of the critical periods in the life of a woman. It marks the transition from girlhood to womanhood, and is characterized by certain anatomical and physiological changes which indicate the awakening of the sexual apparatus to activity. It would seem that in both sexes the reproductive organs, not being essential to life are the last to take up their characteristic functions. Before puberty all the organs of the body show a gradual development—except the generative organs. Their awakening marks the beginning of what is virtually a new existence for the girl. The growth of the organism up to this time seems to be the result of the potential energy derived from the blending of the ovum and the spermatozoon. With the awakening of the sex organs, however, it seems that the

burden of further growth and development is taken up by them. Not only are they responsible for the appearance of the so-called secondary sexual characteristics, but they also exert a profound influence on the physical and mental growth of the individuals.

At the age of puberty, there occurs a rather sudden and usually striking acceleration in the development of the girl. Her figure begins to take on the outline of a woman—the hips become more rounded, the breasts fuller and more prominent, and the nipples become larger. In some cases the hypertrophy of the breasts may become pathologically excessive, constituting the so-called “diffuse virginal hypertrophy.” As a result of a general deposit of fat, the lines of the entire figure become softer and more rounded. A growth of hair appears on the vulva, mons veneris, and in the axillary spaces.

In addition, there occur certain well defined anatomic changes in the reproductive organs. The uterus becomes larger, the fundus more convex and proportionately longer than the cervix. The tubes and ovaries which in the young child are undeveloped, also increase in size at this time. The mons veneris becomes much more prominent, owing to a deposit of adipose tissue, and its skin becomes covered with hair. The labia majora, which are very rudimentary in the young child, become much more prominent. As a result the labia minora becomes more or less concealed.

A radical transformation takes place in the psyche of the girl at this period, for now she becomes conscious, for the first time, of the distinction between the sexes. The exact effect of the new impulse in the girl's life varies according to the temperament of the girl, her environment and associates, and other such factors. A certain element of shyness in the presence of the other sex, a tendency to day dreaming, and a strain of romanticism are often observed. The most important event, however, is the appearance of menstruation. It is sometimes said that onset of menstruation marks the beginning of puberty; strictly speaking, however, this is not correct, for menstruation is only one of the phenomena which make up this period of transition.

The average age of onset of menstruation in the United States is 13.9 years, while in the corresponding temperate zone in Europe, it is 15.5 years. Contrary to the general impression, climate does not exert a powerful influence on the age of onset. It has usually been believed that menstruation appears at a much earlier age in warm countries than in cold, but this is not an invariable rule. The influence of race also seems to be less important than gen-

erally believed, and the same thing applies to manner of life. Individual factors are probably much more important in influencing the age of onset. The mentality of the girl, her surroundings, her education, her temperament, etc., all stand out prominently as factors, which determine precocity in the appearance of the menses. In addition, over-nutrition, excessive meat diet, and intense mental activity are among factors which tend to accelerate the menstrual onset. On the other hand, simple, regular and moderate diet, and avoidance of excessive nerve strain or mental work are retarding factors.

Puberty occurs primarily because of the development and functioning of the ovary. But there is a most intimate correlation of function between the ovary and certain other ductless glands, the most important of which are the thyroid, the thymus, the suprarenal, the pituitary and pineal body. All of these structures have a possible auxiliary influence in the production of the secondary sexual characteristics. It is probably correct to say that when the correlation of function of these various organs with internal secretions is a harmonious one, the anatomic and physiologic changes so characteristic of puberty appear in a normal manner. When, on the other hand, there is a break somewhere in the functional chain representing these organs there is apt to be some sort of abnormality of puberty, either in its character or in the time of its onset.

The hygiene of puberty should not be neglected. A mother can do a most valuable service at this time by preparing her daughter for the advent of the menstrual process, which might otherwise frighten her. Proper instruction in sex-hygiene should be given and her clothing, bathing, diet, recreation and rest should be supervised in a safe and sane manner. It is a dangerous thing for the public schools to crowd too much into the curriculum of the child of this age. Many an invalid woman is the end product of the delicate overworked school girl.

Although the average age at which menstruation begins in this country is about 13.9 years there are many cases in which the onset is considerably lower than this. Speaking generally, it may be said that if menstruation begins and recurs regularly in a girl of less than nine years of age, it must be looked upon as precocious. The history of cases of precocious menstruation show that some evidence of precocious maturity is often observed at the birth of the child. In some, it is the unusually large size of the child, in others the prominence of the breasts or the presence of hair on the vulva.



## PRECOCIOUS MENSTRUATION

According to Lenz, there are three types of precocious menstruation. In one group the premature onset is accompanied by maturation of the sexual organs, and is associated with evidences of general bodily development which ordinarily characterize puberty. This group embraces the majority of cases of precocious menstruation. In the second variety the development of the reproductive organs are again observed, but in connection with tumors involving the ductless glands. In the third group, seen only in a small minority of cases, the precocious menstruation occurs in the entire absence of any other manifestation of premature activity, on the part of the generative organs. Not all cases of precocity continue menstruating up to the time of the menopause. Such a course seems to be the exception, rather than the rule. In some cases menstruation is irregular throughout. In others it is regular for a time and then ceases altogether. In Klein's case the periods occurred regularly for four months, were followed by a period of amenorrhea, and ceased altogether following an attack of measles. On the other hand, in some cases, menstruation has commenced at a very early period and has continued without interruption, except when due to pregnancy or lactation—for many years. One noted case of this was reported by Von Haller in 1751. His patient menstruated regularly from the age of two. At nine she became pregnant and gave birth to a child. Menstruation continuing regularly up to the age of 52, the woman reaching the age of 75.

In spite of the physical precocity in these cases, psychical development is as a rule very poor. In the case of Lenz the child still played with dolls and small children at the age of ten.

Quite a number of cases of pregnancy have been recorded in girls who exhibited precocious menstruation. Perhaps the most remarkable of these is the case reported by Mandeslo, of a child who commenced to menstruate at the age of three and who gave birth to a son at the age of six. In addition to this Lenz has collected 10 other instances of childbirth at ages from eight to 12 years.

The cause of precocious menstruation or of precocity in the other manifestations of puberty in the majority of cases cannot be explained. In view of our ignorance concerning the exact cause of normal puberty, we can only say that premature puberty, like the normal process is probably due to a stimulus arising in some way from the ductless gland chain, and, especially, of course, from the generative glands. Much weight is given to this theory by the autopsy findings in a number of cases of precocious puberty, where tumors of the generative glands

were found. Even more conclusive are several cases in which such tumors have been removed at operation, with the disappearance of the signs of early puberty. Numerous cases have also been reported in which tumors of other ductless glands, notably the suprarenal, pituitary, pineal and thyroid, have been associated with symptoms of sexual precocity.

Medical treatment is never required in precocious menstruation. The time will probably come when organotherapy will be of prime value in the treatment of this as well other menstrual disturbances. At present, however, our knowledge of this subject is so imperfect that no intelligent plan along these lines can be suggested. As Morse emphasizes, the psychological treatment of these cases of premature development is of much more importance. The early development of sexual desire, long before the development of the will power, exposes these children to the danger of violation, as shown by the many cases of early pregnancy which are recorded.

It is probable that many of the cases reported in the earlier literature as cases of precocious menstruation were in reality instances of hemorrhage of non-menstrual character. About one in every 285 new born female infants have a few drops of blood appear from the genitals within a few days of their birth. But this is small in amount and rarely recurs as in menstruation, and these cases never show any of the secondary sexual manifestations.

During the first year or two of menstrual life, periods of amenorrhea are commonly observed, lasting from two to several months. This may occur even in girls who are entirely healthy in every respect, i. e., who are not suffering from such conditions as anemia, tuberculosis, etc. This physiological amenorrhea requires no treatment except perhaps reassurance of the patient. If, on the other hand, menstruation does not appear at the normal age, and if such a primary amenorrhea is associated with other evidences of lack of development, it is reasonably certain that there is some disturbance of endocrine function. Unfortunately it is not always possible, in the present state of our knowledge, to determine just what the endocrine defect is. In the majority of cases, it is probable that the fault lies with the ovaries or the pituitary, and hence administration of extracts from these glands is indicated.

Patients who fail to have the menstrual flow at the usual time of puberty should be examined for the possibility of gynatresia, which is a closure of some portion of the genital tract. In by far the largest number of cases the atresia is noted in the lower portion of the vaginal canal. No symptoms may be noted

before puberty, but after, it causes a retention of the menstrual flow. Menstruation really goes on approximately as in the normal woman with the exception that the menstrual discharge is prevented by the obstruction from reaching the exterior. Congenital gynatresia is manifested as an imperforate hymen or some developmental error in the generative organs. Practically all the well known forms of malformed uterus may be associated with gynatresia, such as uterus didelphys, uterus bicornis or unicornis, uterus bisepticus, etc. The vagina may be single, double or absent. Secondary gynatresia is due to an inflammatory or ulcerative process, which results in adhesions between the vaginal walls. The retention of the menstrual flow, sooner or later causes pain at time of periods, bulging of the hymen or as the condition advances to the development of hematocolpos, hematometra, and perhaps hematosalpinx, a tumor is observed in the lower abdomen. The only treatment is surgical.

#### DYSMENORRHEA

Dysmenorrhea may be primary—or that type of painful menstruation which is not associated with gross pathological lesions in the pelvis, or it may be secondary to definite pelvic disease. Primary dysmenorrhea may be due to mechanical obstruction in the uterine canal; hypoplasia of the generative organs; neuroses of one form or another; or constitutional diseases. A few are relieved after mechanical dilation of the uterine canal—but there is no definite proof that antifixion has any bearing on the production of the pain. The infantile type of uterus is nearly always accompanied with pain at the time of menstruation and it is usually found after marriage, the woman with an undeveloped uterus is sterile. The amount of menstrual discharge from this type of uterus is small but the amount of congestion in the uterine blood vessels is just as great as in the normal uterus. This fact may explain why the pain occurs in this type of case. Frequently it is the pelvic organs that bear the brunt in cases of neurosthenia. These patients, however, usually have pain in the intermenstrual period as well as during menstruation. When their general condition is improved the dysmenorrhea is also generally relieved. When painful menstruation is associated with anemia, tuberculosis or other constitutional disorders one should look first to relieving the general condition. The treatment for primary dysmenorrhea is usually directed towards the relief of pain. Combinations of acetphenetidin and caffeine are usually administered. For the spasmodic type, however, atropin given to a point of tolerance for two days before the period very often prevents the pain. The only radical cure for these cases is pregnancy.

Occasional cases of menorrhagia are seen at puberty. These respond very well to half-dramm doses of the fluid extract of ergot. Metrorrhagia rarely gives trouble at this time.

The only remaining topic concerning menstruation which is of interest to us is the relation of the internal glandular system and its disorders. Cases of this type are usually easy to recognize from their general appearance and their treatment depends upon what we are able to do for the underlying cause.

The question now is, what can we do to prevent these various difficulties? Will wearing properly fitting shoes throughout childhood have any effect? Will correct posture in standing and walking have any prophylactic value? Also, what about overwork? We have every reason to believe that these factors might be extremely influential, but no one has published any conclusive evidence by which these questions may be definitely answered.

\*The material for this paper taken from Monograph by Emil Novak; Menstruation and Its Disorders, 1922.

#### DISCUSSION

DR. COWIE, (Ann Arbor): I encouraged Dr. Brown to go on with his study of menstruation, and I think it is a very important branch for the pediatricist to interest himself in. The great handicap to women, particularly in the various occupations in which they engage, nursing, for example, because of menstruation, is apparent to all of us. It has occurred to me that if the pediatricist would interest himself in its study that he might be able, or that we might be able to find some cause in the development of the child in childhood and possibly we might be able to suggest measures to overcome this serious difficulty—more or less serious difficulty.

In other words, I believe that really it is a child welfare problem and ought to be considered by us, and I think it never has been considered by the pediatricist. It has been considered by the gynecologist, but it has not been considered by them until after the child is a woman and that is probably too late to do any especial good.

DR. BURLEY, (Port Huron): I don't belong to the section, but I came up here expecting to hear this paper because, as Dr. Cowie has just said, I believe that the province of prevention and helping in the welfare of our young girls belongs to this section. When we stop to think of the number of days that single girls, that is, nurses and girls in business, lose on account of painful menstruation, it amounts to a great deal of value in dollars and cents. I was hoping that Dr. Brown had arrived at some definite process whereby he was able to prevent this; the doctor seems to have given a great deal of time to his paper which has been a source of great help to me. He is to be congratulated on the work he has put on it.

But I would like to ask if he has any method by which he teaches young girls or their mothers anything in regard to the welfare of the girls in this regard? Does he follow these cases up from childhood and instruct the mothers along the lines of preventing these things, or is he just doing it as he said, to see what the future will do?

MISS BERRY, (Kalamazoo): I have enjoyed the paper of Dr. Brown very much. I don't want to answer the question that has just been asked, but I would like very much to help with some experi-

ence that we have had over a number of years in the gym. We watch these girls with painful menstruation, and we use a rest period during gymnastic exercises to stress deep abdominal respiration. We feel that physiologically there are reasons for these pains, and deep abdominal respiration helps to relieve them.

DR. ROSENTHAL: Personally I haven't had very much experience, but I have always felt in general practice covering several years that much of this could be controlled if the school board would forget that the brain is the only thing to educate. I think that our children, especially the girls, as well as boys, should be taught to play more, to romp more, to get more actual physical exercise to build their bodies, at the same time as their brains are building. If that were done I think a great deal of our menstrual troubles would disappear as the girls grow older. I have a child myself, now only nine years old, going to school. She is only in the fourth grade, and I am just beginning to realize how the school boards in the city push them along. Now my wife wants her to take up music and pretty soon I will want her to take dancing. Her time will be so occupied that her body won't be developed as it should be. I am finding it out at every turn.

I think a child should have three or four hours of good, hard physical play to build the body. The gymnastic work which children take at school is good. When a parent comes to me for a certificate so that her girl will not have to take gymnastic work, I refuse to give it unless there is a very good reason. Lots of girls are lazy. Don't want to work; they don't realize what it means to them in their future life.

The subject of shoes, too, is a very important one. Decidedly so. Young girls of today are very much enthusiastic over style. They don't seem to realize that the position in which they walk with high heels will do them actual physical damage and I do really believe that a pediatricist should undertake this work; it is his vocation; and, as Dr. Cowie says, it is a matter of a welfare department with the pediatricist, and it is purely an educational matter. There is room for much more work of an educational nature in this field.

DR. BROWN (Closing): In answer to Dr. Burley's question, this paper is simply a preliminary report on the subject with the object of stimulating thought in our group of practitioners. I haven't the real data to offer to answer his question. I think, possibly in 15 years, maybe, we can answer it. At least, we can try, and that is more than we have done in the past.

Since the reading of this paper I have been able to prevent the pains accompanying menstruation in one case by the use of diathermy.

## ACUTE TRAUMATIC INJURIES OF BRAIN\*

H. E. RANDALL, M. D., F. A. C. S.  
FLINT, MICH.

That there are definite indications for operative procedure after head injuries and that there are also on the other hand contra-indications when not to operate seems to be unknown to the laity and not a few physicians if I may judge from my own experience. Brain injuries seem to me to be in the same stage

that the "Acute Abdomen" was 25 years ago.

There seems also to be quite a very common idea that all head injuries require operative measure for their relief regardless of the pathology. On the other hand some cases die that could possibly be saved if the clearly defined danger signal were recognized.

In these days of rapid transit and high powered machinery it is necessary that every physician know when to advise operation and when to leave his patient alone.

It is an old saying that a man may receive a slight injury to his head and die, while another may receive a severe injury and recover. Just why, the older Doctor did not know. We today are able to differentiate these cases.

### MORTALITY

In looking over the records of various hospitals there is a startling mortality. In Cook County Hospital, Chicago in 1,000 cases having any type of fracture of the skull there was a mortality of 53 per cent. In St. Louis, J. W. Stewart (A. M. A. J.) analyzed 6,135 head injuries of which 617 showed skull fractures and found the mortality was over 50 per cent and that of those 300 who recovered, 164 had headaches and various other symptoms which may follow brain injuries.

For over 20 years I have been attending surgeon to the Michigan Home for Epilepsy and Feeble Minded and the staff are of the opinion that traumatism plays a very small part in the causation of these mental conditions.

In the adult however, Stewart quotes English that a man is never the same after a head injury. This, of course, depends upon the type and severity of the brain injury. It agrees however, with the wozzy head of the ex-pugilist.

I am convinced from looking over hospital records that many head injuries are operated on while in shock. To operate in shock unless due to hemorrhage is like throwing a stone to a drowning man and expect him to swim ashore.

While we do not know exactly what shock is, it is usually manifested by a low blood pressure and a rapid pulse. There is a paleness and clamminess of the skin which cannot be forgotten. I have seen patients in shock with a normal beating pulse but this is extremely rare. We have then in shock a fast pulse and a low blood pressure.

### CLINICAL PICTURE

In a typical brain injury the clinical picture is diametrically opposite. Here we have a slow pulse and a high blood pressure and the latter creeps higher and higher and the brain pressure increases until the stage of medullary

\*Read before Section on Surgery, M. S. M. S., Grand Rapids, September, 1923.



compression, when the pulse commences to climb up.

Now this is the important point in all brain injuries. Do not operate in shock. Death will occur in all cases in which the pulse rate reaches or exceeds the systolic blood pressure measured in millimeters of mercury.

We have, I believe, definite indications clinically when and when not to operate in the typical brain injury.

There are other methods of examination which are sometimes of great aid but should not be relied upon implicitly.

The X-ray has been commonly relied upon for a diagnosis of brain injury. It of course, will reveal fractures of vault whether linear or depressed and basal fracture but it cannot possibly show the amount of brain injury which can only be ascertained by other means.

Another valuable aid in diagnosis is the eye ground examination by a competent ophthalmologist. Here again one must not rely too much upon this report. There may be plus I dioptr in a case unconscious for weeks without operative indications. The examination of eye however should routinely be done to check up general symptoms.

The general neurological value examination has not been in my experience of any great value except in a very small proportion of cases.

I do not believe however that the taking of spinal fluid pressure is of extreme value. In a case showing a pressure above 12 mm. with the Fischer spinal manometer immediate decompression operation is indicated if your patient is to be saved from medullary compression and edema which means approaching death. Remembering always that a slow pulse with high blood pressure means a severe brain injury and that operation must be done before the pulse rate exceeds the systolic pressure. Remember also we speak of taking the spinal pressure and not drainage. There has been several deaths following spinal drainage because the medulla oblongata has been forced into the foramen magnum with instant death. I am not in favor of spinal drainage but believe the reading of the spinal pressure is of immense value.

An injury with hemorrhage from the middle meningeal artery gives usually a very clear clinical picture. There is a period of unconsciousness followed by consciousness to be followed by another period of unconsciousness. These typical cases should be operated. Why some writers do not agree with this teaching is beyond my understanding. No one, it seems to me, would care to leave a clot of blood on a delicate structure such as the brain. I have seen five cases, all have recovered after what I con-

sider proper treatment, viz.: ligation of the artery.

With traumatic head injury in childbirth I have had no experience but in 116 G. S. W. of brain which I saw in service I firmly believe the best treatment is to leave them alone.

I can sum up my experience in head injuries with the following comments.

#### COMMENTS

1. All depressed fracture of the vault should, I believe, be operated after shock has passed.

2. Severe brain injuries give a slow pulse and later a high and rising blood pressure.

3. Shock gives a rapid pulse and low blood pressure. No operation.

4. Middle meningeal artery hemorrhage gives a definite clinical picture of loss-regain and loss of consciousness, practically the only brain hemorrhage the surgeon can control.

5. Pupil dilatation and light re-actions are neither of diagnostic or prognostic value.

6. Loss of consciousness is not of itself an unfavorable prognostic sign.

7. Medullary compression and edema following brain injury show an increasing pulse rate with a rising temperature and respiration to the moment of death. A typical chart.

8. Brain contusion and laceration with symptoms of shock have a rapidly rising temperature, respiration and pulse and nothing in a surgical way can be accomplished.

9. In doing a decompression operation be sure to find out if the patient be right or left handed.

10. Conservative treatment is best for most cases of head injuries. Probably less than 10 to 20 per cent of all cases require operation.

11. Charles H. Frazier in an editorial in *Surgery, Gynecology and Obstetrics*, summed up that temporal decompression will not always tide the patient over the crisis. As a matter of fact, temporal decompression in which there is no free fluid and the brain herniated through the dura you must give a guarded prognosis. With an excess of cerebrum spinal fluid in the arachnoid and sub-dural spaces the case is more favorable.

12. We should discard such terms as concussion.

#### DISCUSSION

DR. F. C. WARNSHUIS, (Grand Rapids, Mich.): The present amount of traffic upon our highways and the congestion upon our streets have brought to our hospital doors and to the offices of our doctors an increasing number of intracranial injuries which demand a definite treatment if we are to maintain a mortality that is consistent with the skill we are presumed to possess. This is particularly true when we consider that in 38 articles on the subject, 32 different methods of treatment were recorded. It is time for us to have a definite plan

of treatment. The outline Dr. Randall has given us this afternoon is one that well serves as a guide by which we can obtain a more desirable mortality rate and better end results following these injuries. If one has to contend with a patient who has developed paralysis, has a slow respiration of the Cheyne-Stokes type, with a slow pulse or one that is moving from 70 or 80 to 100 or 120, with other signs of intracranial pressure, then I agree with those who say that we had better leave these patients alone if we are content with a mortality rate of 53 per cent. On the other hand, records of hospitals where a large number of these cases come, like in the Metropolitan Hospital of New York, quoted by Dr. Randall, show that the mortality can be reduced to 30 or 37 per cent. Then it is our duty to introduce treatment of such nature as will maintain this 20 per cent reduction in mortality. That will be accomplished by first studying every case that comes to us in a careful manner and watching, by our examinations, the progress that is occurring following the injury that has been sustained. Thirty-one per cent of the cases may only show signs of intracranial pressure. It is this 31 per cent of the cases that we are called upon to deal with in a definite manner and Dr. Randall has given very well the signs and indications which tell us when we should become more aggressive in our treatment. For the first six hours the patient will remain in a more or less unconscious condition. Unless there is compounding of the injury with active hemorrhage, then we may well defer all operative interference until the patient has recovered from the shock. If the patient, six or twelve hours after the injury, commences to show signs of increasing intracranial pressure, congestion, anemia, collateral edema and finally compression, if we let the patient go on to that stage where the respirations are slow and the pulse runs 50 to 60, we should then do a decompression and in doing a decompression we should do a subtemporal one bilaterally and be sure at that time that we also make an incision of the dura; if we do this, we are giving that patient a fair show for recovery. That is the only indication for operative interference on these fractured skulls with the subsequent brain symptoms that occur except in those that show symptoms of intracranial pressure. This statement is based on personal experience, for it was just the last month in which we had 11 fractures of the skull with one death. That death occurred in a child of 6 years, who had a depressed fracture, compounded, with active hemorrhage. In the endeavor to stop the hemorrhage the fracture was raised and as it was raised it was found the bone fragment had punctured the lateral sinus and a fatal hemorrhage occurred. The others all recovered.

I want to repeat that I think Dr. Randall has given us a line of treatment which, if followed, will reduce our mortality from 50 per cent to in the neighborhood of 30 per cent.

DR. DONALD R. BRASIE, (Flint, Mich.): The records of a Receiving Hospital in Detroit show that the mortality from skull fractures is much better without operation. I have a compilation of 95 consecutive cases of skull fracture from the records of Receiving Hospital. Out of the 95 cases there were 36 deaths, a mortality of 38 per cent. Of these 36, 6 were typical alcoholics and 6 had injuries of other parts which of themselves were sufficient to cause death. One was a compound fracture of the left femur in an old man. Subtracting these 6 cases from the 36 leaves only 30, or a mortality of 31.6 per cent due to skull fracture, which, as indicated, is a low mortality rate for this type of injury.

Of the 95 total fractures, 54 were of the vault, and of these there were 9 deaths, or a mortality of 16.6 per cent. Of the fractures of the base there were a total of 41, with a mortality of 27, or 65.8 per cent.

Deaths from skull fractures show somewhat different according to the age group. In the 1-20 age group there were 7 deaths, or 21.9 per cent. In the 21-40 group there were 12 deaths, or 37.2 per cent. In the group from 41 on there was a mortality of 43.6 per cent, showing the mortality rises according to age. Of the total deaths, 17 died within 6 hours; 18 lived from 6 to 24 hours; 8 lived more than 24 hours. Of the total group there was only one case operated following a rapid rise in pulse and respiration. This case was operated on four hours after injury and while still in shock. The patient died three hours later.

The routine treatment that is recommended and followed out in the Receiving Hospital of Detroit:

1. Elevate the head of the bed.
2. Immediate S. S. enema or some drastic enema.
3. Icebag to the head and a sedative, rarely morphin, but usually hyoscin. Dr. Sharpe of New York recommends one-twelfth of a grain dose.
4. Blood pressure should be taken every 15 minutes for the first hour and after that one to two hours.

DR. ANGUS McLEAN, (Detroit, Mich.): I think the paper of Dr. Randall is very interesting, particularly so regarding fractures of the base, of which there are a large percentage of cases. I want to emphasize first that we should wait until all symptoms of shock have passed. But you see cases that have symptoms of pressure that later develop extradural hemorrhage; those cases ought to be trephined and ought to be elevated. There are others where you have a subdural hemorrhage and which later on require trephining and drainage. I think these cases referred to are the ones treated in the first 24 hours. The whole of brain surgery as well as that of injuries to the skull is becoming more conservative. This is just one broad step in a conservative direction.

DR. MAX BALLIN, (Detroit Mich.): This paper and the discussions that followed give us many interesting points in the treatment of head injuries. About 10 years ago there was hardly a skull fracture that came into the hospital that was not operated on. Now we handle them in a more conservative manner and we operate only on cases with symptoms of pressure. As a consequence our results are much better.

DR. H. E. RANDALL, Flint Mich., (Closing): I have tried to make it as plain as I could that we must distinguish between the typical head injuries and the shocked cases. That was my primary object in presenting the paper. The typical brain injury with increasing pressure gives a very definite clinical picture. I have a number of charts which I will not show today which illustrate this very accurately. If I could just get this to the medical profession that the shock cases show rapid pulse, low blood pressure, whereas the typical head injury shows increased blood pressure and slow pulse, we would recognize those cases early enough to operate on them to give them relief. Not all cases should be operated on. There are so many phases of acute traumatic injuries of the head that we have not time to take up. I have seen men with depressed fractures where many were raving maniacs and as soon as this pressure was relieved they became normal again.

## A CASE OF DIABETES MELLITUS IN A CHILD TREATED WITH INSULIN

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Prior to the epoch-making work of Banting and Best, the pediatrician approached the treatment of severe juvenile diabetes with a feeling bordering on total helplessness. This was particularly true if the diabetes were accompanied by acidosis or coma. The chief causes for this feeling of helplessness in pre-insulin days were:

1. Difficulty in arresting the rapid progress of the disease because of the extremely low carbohydrate tolerance usually encountered in children.

2. The impossibility of even approximating a normal state of nutrition.

3. The difficulty of satisfying the child's craving for food, particularly carbohydrate food, this leading in turn to the stealing of food and the consequent disruption of the entire dietary regimen.

The present case is presented as an illustration of what may be expected from the employment of insulin in the treatment of juvenile diabetes.

The patient, a girl of 6 years, was brought to us on August seventeenth with a complaint of rapid loss of weight. This had apparently begun about three weeks previously and during this interval the patient had lost about 10 pounds. During this same period there had developed marked polyuria and polydipsia and the mother had observed that her usually excellent appetite was somewhat increased. No pruritis had been observed, nor had any ulcers or other skin manifestations developed. For about 24 hours prior to coming under observation an unusual and progressive tendency to drowsiness had been observed and this was the immediate cause for the mother seeking medical advice. There was no knowledge of glycosuria having existed previously.

The family history was important in that a maternal aunt had died of diabetes.

The past history was entirely unimportant.

Physical examination showed a markedly undernourished child. She was distinctly drowsy, but could be easily aroused and answered questions intelligently. There was a strong odor of acetone on the breath. The respirations were slow and deep and entirely costal in character. The skin was dry and extremely loose. Otherwise the physical examination was entirely negative.

An immediate qualitative examination of the urine showed large amounts of sugar, acetone and diacetic acid.

The patient was immediately taken to the hospital, where she was given 10 units of insulin subcutaneously and 10 grams of glucose with orange juice by mouth. In about 12 hours the drowsiness had entirely disappeared and the hyperpnea practically so. There was still a strong acetone odor to the breath and the urine contained large quantities of acetone and diacetic acid. The carbon-dioxide combining power of the blood was 29.7 vol. per cent. During this period no effort was made to reduce the glycosuria or hyperglycaemia, the latter being looked upon as an important aid in combatting

the acidosis. In fact, to insure a hyperglycaemia a gram of glucose was given by mouth with each unit of insulin administered.

On the second day only a trace of acetone and diacetic acid remained in the urine and on the following day the additional glucose given with the insulin was omitted. From this point our efforts were directed toward reducing the hyperglycaemia and glycosuria and producing a gain in weight.

During the third and fourth days of hospitalization the patient received a diet containing 20 g. of carbohydrate, 30 g. of protein and 60 g. of fat and 15 units of insulin, given as 5 units three times a day, one-half hour before meals. On this regimen her blood sugar fell from around 0.3 per cent to 0.2 per cent. She continued to excrete about 26 g. of glucose, however, and her weight remained stationary. It was decided, in order to economize on time to increase both the diet and the insulin simultaneously. She was therefore given a diet containing 25 g. of carbohydrate, 30 g. of protein and 75 g. of fat. Theoretically 1 unit of insulin will account for from 1.0 to 1.5 g. of glucose directly, and allowing for the amount of glucose still being excreted, it was felt that the patient would probably require from 20 to 30 additional units of insulin. These theoretical requirements, however, are only approximate, and consequently only half of this amount was added, making a total insulin dosage of 30 units per diem, or 3 doses of 10 units each. This produced such an immediate drop in blood sugar to 0.133 per cent, that it was felt safer to fall back to a daily dosage of 20 units. On this amount and with her diet unchanged, the urine became sugar free, the blood sugar approximated a normal level and a most satisfactory gain in weight was begun. After a few days of uneventful progress, the insulin was given twice daily in doses of 10 units, one-half hour preceding breakfast and supper. No untoward results were noted from this change and the diet was then stepped up to 35 g. of carbohydrate, 40 g. of protein and 75 g. of fat for a total of 975 calories. On this diet the patient was discharged, the mother having learned the technic of insulin administration and become sufficiently skilled in the preparation of her diet.

As regards the type of diet employed—that on which the patient was discharged from the hospital, while probably sufficient for basal requirements and growth and a certain amount of activity, is still not adequate. It is still lacking both in total calories and in protein. Holt's observations would indicate that a child of this age should receive 3.0 g. or more of protein per kilo and total calories of 75-80 per kilo. This could be supplied by a diet containing 40 g. of carbohydrate, 60 g. of protein and 95 g. of fat, or a total caloric intake of 1,250 calories. As the patient's strength returns and her activity increases, this diet will be approximated and the necessary increase in insulin dosage made. All of these diets give K/AK of 1.3/1 to 1.5/1. We have not felt that the diets giving the higher K/AK ratios which are so advantageous without insulin are desirable with it, although they can of course be safely employed. The reason for this is that an extremely high fat diet which will supply the protein requirements for a child must of necessity contain such a low carbohydrate content as to be relatively unpalatable. The opportunity which insulin affords to give a diabetic child a palatable, satisfying diet, is one of its many advantages.

One of the most striking indices of improvement in the present case is the increase in utilized carbohydrate. This rose from 13.4 g. on August 19 to 65.7 g. at the time of discharge.

An effort is being made to keep the patient's urine



sugar free at all times, as it would seem that only in this way can we hope for the greatest increase in natural tolerance for glucose. There is not, however, a unanimity of opinion as regards the advisability of this. Geyelin and Harrop feel that it is better to allow a constant minimum amount of glucosuria. There is no gainsaying the fact that this provides the greatest safeguard against hypoglycaemia and is probably the preferable method if the physician does not feel complete confidence in the ability or co-operation of the parents.

In conclusion, the case presented illustrates:

1. The usefulness of insulin in the treatment of diabetic acidosis and impending coma.
2. The ease with which the downward progress of the disease is arrested and a gain in weight established.
3. The rapid increase in the amount of utilized carbohydrate.

#### DISCUSSION

DR. COWIE: I am very much interested in the case that Dr. Montgomery has presented. It illustrates very well the antiketogenic action of insulin, which is, of course, certain, providing there is sufficient sugar utilized by or mobilized by the insulin. Dr. Montgomery has spoken about choosing the dose. It is a rather difficult thing to do. As we felt at one time, one unit of insulin would cover two grams of carbohydrate, and then later that one unit of insulin would cover one and one-half grams of carbohydrate, but we have found in other cases that one unit of insulin would cover many more carbohydrates than that, and others less. So there is no unanimity in the dosage. You cannot say that you must give so much because there are so many grams of glucose in the urine, although that is a very safe guide.

In the treatment of diabetes in children I think the thing to think of is this: Without insulin we have an absolutely hopeless disease. With insulin we have a disease in which there at least is some hope of continuing the patient's life. That being the case I thoroughly believe that our duty is to give all children insulin, because diabetes in children is always a serious disease. It is not like diabetes in the adult.

So I feel quite firmly that just as soon as you make a diagnosis of diabetes in a child you should try to work out the child's metabolism, his ability to handle carbohydrates. Be sure of that. And then just as soon as possible raise that child to a diet that will enable the child to carry on the normal activities of the child.

In other words, 30 grams of carbohydrates is not enough. Thirty-five grams of carbohydrate is not enough for a child, we will say, 3 years old, or 2 years old, to carry on all the activities of a child of that age, and we see to it at least that we furnish enough carbohydrate to the child to carry on the medium or normal activities of a child of those years.

So we now step our diet up to that point, giving enough insulin to cover the diet, completely watching the blood sugar until it gets down within the normal range, and watching the urine, but not trying to keep the urine always sugar-free, although in some cases that is very easy to do, in other cases it is very difficult to do.

You will find sugar in the morning urine in a large percentage of children and adults treated with insulin on sufficient carbohydrate intake to enable them to do their work or enable them to play.

Now what do we find after doing that? We find that after a while, before three or four weeks, down comes our insulin where it requires 60 units of insulin a day to completely cover the carbohydrate, plus the effort of the patient's own pancreas. Then as time goes on 55, 50, 40, 35, 15, 10 units a day, and in some cases in adults we have got it down to where it required 60 units of insulin a day to make that patient metabolize 40 grams of carbohydrate, where at the end of six days' time he could metabolize 80 grams of carbohydrate with two units of insulin a day. He was perfectly happy; eating all he wanted to eat.

They don't all get that way, but there are some that do. Children are immediately, within a comparatively few days, just as happy as any child, and it is a wonderful thing. The Central States Pediatric Society is going to come to Ann Arbor through the kindness of Dr. Cooley, and I hope to have the privilege of showing you some of these cases I have been talking about.

We have a group of children there who are the finest specimens in the world, no question about it. To see these children walk around you would not usually say, "That child is not a hospital case; he must be a school boy or girl coming in." They are the brightest, happiest children we have in the hospital; perfectly happy. If we can do that for them, it seems to me it is a wonderful thing.

DR. MONTGOMERY: I think the facts mentioned in discussion regarding the appearance of these children after treatment with insulin is the most striking thing about it. It certainly is different from what we used to see. Within a few hours, almost, they are up and around and playful. Really a most remarkable thing.

#### CLINICAL CASES

*Reported Before Section on Ophthalmology,  
Oto-Laryngology, State Society Meeting,  
September, 1923.*

Dr. John F. Rogers, Grand Rapids, presented a case of Foreign Body in the Anterior Chamber Removed by Magnet.

DR. JOHN F. ROGERS: This case is presented, not because of any very unusual features, but in the hope that a discussion of foreign bodies in the eye may be elicited.

H. R., employed by a local department store, received an injury to the right eye at about 4 p. m., August 2, while wielding a hammer and chisel, a small fragment from the hammer striking him in the eye. He was examined within an hour of the accident. At this time the following condition was found:

Considerable photophobia; eye injected, not very painful. Anterior chamber obliterated by escape of aqueous. A small, irregular corneal wound at 3 o'clock, extending across the limbus; above this the steel sliver, with its long axis horizontal and its point slightly imbedded in the iris.

The eye was thoroughly cocainized, the wound enlarged with the keratome, and then the point of the magnet placed against the lips of the wound, bringing one corner of the foreign body down adherent to the magnet. I did not use forceps, because in my experience you often shift the position of the foreign body and you may lose it behind the iris. In these cases where the foreign body is in the anterior chamber and easily accessible, I believe it is better to use a magnet in extracting the foreign body.

There was no reaction in this case and he had practically no pain. The eye was kept under atropin for a few days and he went back to work in about 10 days. His vision is now 6/6, and he has practically no trouble with the eye. The pupil is slightly distorted and there is a little intrusion of the iris, the foreign body being imbedded in the iris. But his vision is now normal.

#### ACROMEGALY

Dr. P. T. Grant, Grand Rapids, presented a case of Acromegaly with Optic Nerve Symptoms.

DR. P. T. GRANT: On June 16, 1923, Mr. J. W. consulted us on account of failure of near and distant vision.

He was 55 years of age; born near Grand Rapids and always lived in Michigan. Always had large hands and features. He had some of the diseases of childhood, but no serious sickness. His father died at the age of 82 of kidney disease; mother died at 84 of dropsy—he said. He has two brothers living; one brother died of scarlet fever and Bright's disease. One brother has always had large hands, but features seem normal. Two sisters living; one had a goitre which was operated. Both in good health at present.

Mr. W. has worn reading glasses for five or six years. Has been losing vision the past five or six months. His vision at the time he came to us was 20/200 O. U. This vision has improved to about 20/70 O. U. and 20/50 binocular. This improvement may be due to leaving off tobacco and alcohol. His fields were slightly contracted for color, but it was impossible to take the field owing to the fact that he had very heavy overhanging eyebrows.

There was no history of G-U disease; the Wassermann was negative. The pupils are normal and react normally to light; action of the muscles normal; no nystagmus.

On ophthalmoscope examination when we first saw him the right eye showed a piling of pigment between disc and macula; the center of the disc had no physiologic cup; we could not see that the disc was choked. In the left eye the nasal margin of the disc is obscured and there is elevation of the center of the disc, with arteries smaller than normal in proportion to the veins. There is slightly excessive pigmentation between discs and macula. We examined him ten days ago and the ophthalmoscope showed a distinct elevation of the center of the disc, although the margins of the disc were still clear. There is considerable improvement not only in the eye condition, but in the general health.

The treatment of this man, unfortunately, was carried on by a chirurgo-medical man, and he was not generous enough to tell me what he was doing for the man. His X-ray report is as follows:

Examination of the single left lateral plate of the skull shows a very great thickening of the bones comprising the skull, and also obliteration of the sutures. There is an enormous frontal sinus present; the mastoid cells are clearly outlined and apparently negative. The lower jaw is rather thin between the upper and lower margin of the process, the chin projecting somewhat. The plate of the sella turcica shows some thickening of the posterior sphenoid process and a sort of ragged appearance of the anterior; the space between the two is not increased and sella is of good size and larger than normal. The sphenoid sinus is shown on the a. p. plates and this also is of good size and apparently clear. The plates taken of both hands show the enormous size of the phalanges, which are increased chiefly in width; the metacarpals are massive also; no

appreciable change is seen in the carpal bones.

QUESTION: What does this patient weigh?

DR. GRANT: About 225 pounds. Of course, the bulging of the disc must be accounted for by increase in cranial pressure. If any of the men have had any experience with such cases I would be glad to have any suggestions in regard to treatment. I have had very little experience and know little about treatment.

DR. HOWARD W. PEIRCE: I would like to mention a case of acromegaly in which the only condition found was tinnitus. I am not ready to do more than mention the case because it is recent and has not been thoroughly studied. But it is a little unusual, I believe.

DR. HEMAN GRANT: Did this man have a loss of hair?

DR. P. T. GRANT: The man has a good growth of hair, a heavy growth, in fact. It is very coarse.

His history points to acromegaly started in early childhood. The development of his body would indicate that. His brother having large hands, but not large features, is interesting along that line.

DR. WALTER PARKER: I think the condition of the nerve head is very interesting in this case. In talking about pituitary tumors you must first separate pituitary involvement from neighborhood tumors, which sometimes can be done. We should decide whether it is a pituitary tumor, or a neighborhood tumor pressing upon the pituitary. If the nerve head is involved we get a paling of the nerve head. There is no definite field change with pituitary symptoms. A bitemporal hemianopsia should be present, theoretically, but it is not always true. You more frequently find the slants that Cushing tells about, first for color and then for form.

I happen to have under observation at the present time a pituitary case which has a bitemporal hemianopsia for green only; the other fields are practically normal. But there is always paling of the nerve head out of proportion to the diminution of vision. Occasionally there will occur an oedema in addition. What must have happened? Of course, the whole thing is extra dural before it breaks through, and you do get intra-cranial involvement with intra-cranial pressure, and your pupillary oedema is superimposed on that. It gives a clinical picture that resembles nothing else. But you look further for oedema and back in there you will see a nerve head that is atrophic. I feel quite sure that is what the doctor has. It means a late stage of the disease. Of course, the treatment depends upon whether you have hypo-pituitarism or hyper-pituitarism. I do not know much about any treatment except surgical. The surgical treatment of pituitary tumors depends entirely upon whether or not the patient is going blind. If the patient can hold his vision for a long period of time, he probably should not be operated. But the vision is the thing. If his vision is going down, if the nerve head is paling and the chances are he will be blind, I believe he should be operated. Whether the operation should be by the trans-sphenoidal route or the external route depends upon the surgeon himself. My opinion is that the trans-sphenoidal route is not used as often as the external route. Some of the results are perfectly startling. I had a case of a man who was entirely blind in one eye; his vision was 20/50 in the other eye. The eye which was not blind showed a temporal hemianopsia. He refused operation at first, but when the vision in the second eye went down to 20/50 he consented. Cushing operated on him in 1913. In 10 days his vision was normal, and in three weeks his field was clear. I have had him under observation since that time and his fields are perfectly normal and his vision

is normal. After the operation he took 2½ grams of the whole gland over a long period of time.

Dr. de Schweinitz and Dr. Holloway have placed on record three cases where the fields have been made almost normal and the vision improved by the extract of the whole gland, and in any case where operation is not done I think the extract should be given.

I have been working for two or three years (but have nothing to talk about yet) on the pituitary gland as we see it throughout life. The symptoms which are referable to the pituitary gland in pregnancy are well known; they are fairly well known during the menopause; but they have been neglected in adolescence. There are four periods in a woman's life that are inter-related and similar in character: Adolescence, the menstrual period, pregnancy, and the menopause. At the time of the menopause the thyroid may become enlarged and there may be general glandular involvement; and if there is a physiological thyroid in children we think nothing of it any more. Why can not a physiological enlargement of the pituitary gland give the vague headaches that we have so frequently in girls, and why would it not account for occasional cases of headache and poor vision at the menstrual period in women who do not use their eyes at all? We all have had cases of women who become partially blind during the menstrual period, and we all know of cases where women go blind in pregnancy without nephritic symptoms. For the last four or five years I have been trying to get that group of cases together—women with protracted headaches during the menopause, and children during adolescence, giving them small doses of extract of the entire gland, and it is one of the most gratifying things I have ever done. I believe these are physiological pituitary changes. It might be occasioned by two things—a small sella or a large gland. The gland becomes involved, and then you have pressure symptoms. The only changes in adolescence seem to be toxic in character. You get a central scotoma, a retrobulbar neuritis. Later it seems to be more mechanical in character, and you get field changes that are quite typical of pituitary changes. It seems to me it is possible to tie these things up and have something to talk back on in those cases that have not been relieved by general treatment nor by repeated refraction.

#### PITUITARY TUMOR

Dr. Ferris N. Smith, Grand Rapids, presented a case of Tumor of Pituitary Operation.

DR. FERRIS N. SMITH: This patient, aged 35, came for examination in November, 1922, complaining of intense temporal headaches, progressive loss of vision, and also of complete blindness in the left eye. The only other findings of interest were historical—the fact that she had increased in weight considerably. There was a slight change in position of the clinoid fossa. The X-ray findings are quite typical of pressure in the sella. Another thing was the varying of the sphenoid.

The patient was referred to Dr. Parker at Ann Arbor for examination and confirmation of our findings, and he reported a probable pituitary tumor. He expected to send his chart of the visual field and eye findings, but I do not have this as a matter of record.

The patient was operated on the twenty-ninth of November by the transparietal route, and the tumor uncovered without much difficulty. However, it was impossible to remove the tumor by that route because of the continuous oozing through the arachnoid. We could not keep the area of the tumor dry enough to keep a lamp burning so we

could see. The tumor was uncovered, and we loosened a tumor mass about the size of a large walnut, a flat, bluish, soft tumor. A pack was left in the cavity and a flap closed over it and the patient returned to bed. On December 9 the tumor was removed by the trans-sphenoidal route. A complete submucous resection was done, the middle turbinates removed, and the whole tumor mass dropped down and was removed with a snare and curette.

Following removal a 25-milligram tube of radium was left in the wound for six hours—150 milligram hours. Following the second operation the patient was discharged from the hospital on the eighth day, and about three or four weeks subsequently she was given 8,000 milligram hours of radium, 4,000 on each side.

Dr. McCrea reports the eye findings: Right eye, 6/5; left eye, 6/6; normal visual field; reads No. 1 Yaeger type on both sides. There is nothing further to say about the patient. Dr. Parker has discussed the points of interest in pituitary tumor.

There is one thing additional that I want to mention, in which I do not agree with Dr. Parker. He said that almost the sole indication of surgical relief was visual change and threatened loss of vision. I am quite sure he will agree that constant headaches which cannot be relieved demand surgical interference. Mrs. Keller's main symptom was constant, intense headaches and, of course, the minute loss of vision in the right eye and total loss of vision in the left eye demanded some interference.

DR. DON A. COHOE, (Detroit): I would like to ask Dr. Smith the type of headache from which the patient suffered. I think the type of headache, whether it is deep-seated, or whether it is a sharp, sudden pain, or a constant boring pain, has a great deal to do with making a diagnosis of intra-cranial tumor and differentiating it from other causes.

DR. SMITH: Mrs. Keller complained of constant, intense headache localized mainly in the temporal region. My own experience would not lead me to believe that the headaches are typical of the location or size of the tumor. I have a case of brain tumor in the hospital this morning in which there seemed to be diffuse headache—the woman is not clear enough to describe her symptoms accurately. But in other cases I have felt that headache was the most unreliable sign that I had to deal with—either the location or the type.

In this case the margin of the tumor was quite definitely attached to the sinus. I was able to enucleate it with my finger, and if it had not been for the oozing the tumor could have been removed at the first operation.

DR. L. W. TOLES, (Lansing): I would like to ask for the pathologist's report on the tumor.

DR. SMITH: Dr. Warthin reported a large adenoma. As you know, all these tumors of the brain undergo malignant degeneration, and that was the reason for the radium following operation.

DR. P. T. GRANT: How long had she been blind in the left eye?

DR. SMITH: I do not know, except that some eye men had been taking care of this patient for several months.

DR. P. T. GRANT: How long, following the radiation, did the vision come back?

DR. SMITH: I think the first we noticed was five or six days afterwards, when she could read coarse print with her left eye.

DR. P. T. GRANT: It is remarkable how these cases will regain vision after complete loss. The case I reported without any treatment regained central vision.

DR. SMITH: You would not expect, ordinarily,



that a blind eye would regain 6/6 vision.

DR. PARKER: The case I had did the same thing.

#### SARCOMA OF ANTRUM

DR. FERRIS N. SMITH: I have also two other patients I wish to present, one with sarcoma of the antrum, and the other with sarcoma of the tonsil.

Mrs. J. came to me in November, 1919, with a very large tumor mass on her face, producing considerable pressure on the right side of her nose and eyelid. On examination it was found that this mass involved the buccal soft parts, the entire alveolar process, the hard palate, part of the soft palate, the entire antrum and floor of the orbit. On section it was found to be sarcoma. The entire pathology was consequent upon the removal of an impacted tooth some years previous. The history was that it had grown slowly for some time, and a few months before began to grow rapidly. Obviously the thing was inoperable because of the very extensive involvement which would necessitate complete resection of the upper jaw. Mrs. J. was advised that the only possibility for her was radiation. She was sent to the hospital and given Cooley's serum over several weeks, commencing with a quarter-minim dose away from the tumor, and finally a one-half minim dose in the tumor, increasing daily. She was kept at a constant temperature of 103 and the treatment continued until she had a toxic myocarditis. Within six or seven days after the first injection there was a marked change in the size of the tumor, a progressive change until the Cooley's had to be abandoned. The soft parts had almost entirely cleared up and there was considerable change in the bone. The antrum was opened from the inside buccal surfaces and the tumor mass removed with a cautery knife, and the residual tumor mass cooked with a soldering iron. A few crusts adhered and she was treated on several occasions with radium. I would like you to come up and look at the antrum and see the condition now.

#### SARCOMA OF TONSIL

This little girl came to my attention in the middle of August, with a history that two months previous she had had sore throat with a small mass in the region of the left tonsil which the family doctor had diagnosed as peritonsillar phlegmon, which he incised, following which there was a rapid increase in the size of the mass. She was referred to a surgeon, who removed the tonsil and sent it for section. Dr. Warthin reported that the mass was a muco-sarcoma, and she was sent to us for operation. There was a mass in the tonsil and palate about the size of an English walnut, and at the time of operation she had marked enlargement of the sub-maxillary lymphatics and in the region of the choroid angle. It seemed unwise, surgically, to attempt to remove the tonsil and palatal mass, but absolutely necessary to block off lymphatic drainage. On August 15 a block resection of the left side of the neck was performed, and subsequently small doses of radium put into the mass. Ordinarily when we radiate this sort of case with large doses of radium or X-ray we operate and then follow with further radiation. We have had one or two unfortunate experiences with block resection with the use of radium at the time of operation. There was sloughing in the region of the constrictor muscles and subsequent fistula into the mouth, with a fatal outcome. So I no longer have the courage to use large doses of radium at the time of radical resection. For that reason such treatment has been deferred in this case. Our further plan is to plant probably 15 or 20 spicules with radium emanation

in this tonsil and palate and let it decay, and give her the maximum dosage of deep ray or radium externally.

One point in that connection which I would like to emphasize and which I think will become of more importance as it gains attention, is that in any of these cases of malignancy of the throat—and perhaps it is true of the whole body—where the toxic absorption has gone to the point where the creatinin index is around 3, it is foolish to proceed surgically or with radiation, because the patient is almost sure to die. I recently had a sarcoma of the tongue which was treated with two or three 12½ radium needles with a dosage of 150 millimeters. The patient died in a few days. He had a creatinin index of 3.8. That is one of several unfortunate experiences in a number of observations. So I would recommend that any of you who are treating these tumors with large doses of radium or ray, pay attention to the blood chemistry findings and the creatinin index.

#### TUBERCULOSIS OF SEPTUM

Dr. M. A. Farnsworth, Battle Creek, presented a case of tuberculosis of the septum.

DR. M. A. FARNSWORTH: This patient first came to my office on March 23, 1921, complaining that the left side of her nose had been stopped up for several weeks. Never had had any previous trouble. Her general health was good, but she had lost about 12 pounds in weight. She did give a history of having had flu a few weeks previous to coming to the office.

Examination showed a growth about the size of a dime on the anterior portion of the cartilaginous septum, just posterior to the muco-cutaneous junction. In appearance it resembled a large seed wart. This was removed and the area cauterized with 40 per cent silver nitrate. The wound healed beautifully and the patient was asked to report for observation about once a month, which she did for about nine months. Then she failed to come in for three months.

The tumor was sent to Dr. Warthin at Ann Arbor for diagnosis. He reported it full of *T. B. bacilli*. She was then referred back to her general physician for further examination to see if we could locate any primary cause. The report was negative.

On March 12, 1922, almost a year after the operation, she returned, saying she believed the tumor was growing again. Examination revealed a growth as large as the original one on the left side and a small one directly opposite it, extending out into the right nostril. The patient was then taken to the ear, nose and throat department of the Battle Creek Sanitarium for consultation, being seen by Doctors B. N. Colver, C. G. Wencke and R. Runck. She was then referred to Dr. Pritchard for chest examination, who reported as follows: "Lungs show no active phthisis, but right apex shows an old thickening, which in all probability is a healed lesion."

It was then decided to excise the mass (as the infection would soon break down the septal wall), hoping to surround it and thus remove all the infected tissue. This operation I performed April 7, 1922, first removing the cartilage as for a sub-mucous operation, with a swivel knife. Then with knife and scissors I removed all the mucous membrane from both sides of the septum, making one large perforation. The wound healed in the usual time and remained so till about October, when a small growth began to develop along the roof. Then she was given about a dozen treatments with the Kiomeyer lamp, which seemed to help some, and on May 18, 1923, it was decided to try radium. She

was given as first dose 25 milligram hours; and on June 15, 1923, 50 milligram hours. Since that time it has continued to improve until it now appears to be cured. At the same time we began giving her Mulford's Old O. T. Tuberculin, and she has now had 33 treatments. The patient says she had gained back the weight she lost before her first operation and that her general health has improved.

In looking over the records of other cases that have been reported, the consensus of opinion seems to be that radium is the best treatment for this condition, and if opportunity presents itself again I shall try the radium first before proceeding to operative measures.

#### SINUSES INVOLVEMENT

Dr. C. G. Wencke, Battle Creek, presented a case of Sphenoidal Sinusitis Without Involvement of Other Sinuses.

DR. C. G. WENCKE: The case that I have to present to you is one of sphenoidal sinusitis handled surgically, the approach being made submucously, by way of the septum.

In the study of sinus involvements in the clinic at the Battle Creek Sanitarium, we have been constantly striving to perfect a method by which we could approach and produce a permanent drainage of the sphenoidal sinuses without the destruction of any of the turbinal tissue, as it has been our observation that in cases where the turbinal tissue is removed to any extent the patient complains of varied and uncomfortable symptoms following the surgery. While studying out a method to accomplish the above results, we also came to the conclusion that it is just as logical to have a monosinusitis of the posterior group as it is to have one sinus involved in the anterior series, such as the maxillary. It is in this type of case, where you have only the sphenoids involved, the posterior ethmoids being free of any pathology, that this method of approach is applicable.

When we have a case of residual sinusitis involving one or both sphenoids, and believing that the deviated septum is a factor in the cause, we proceed with the ordinary submucous resection according to the usual technique. When the spine of the sphenoid bone is approached, the mucous membrane is elevated laterally. Then with a fairly sharp elevator, or with a knife, a vertical incision is made in the anterior bony wall of the sphenoid on either side of the spine. Then with a biting forceps the spine is removed. We found that such incisions make this latter step easier. We then proceed with a biting forceps, such as the Hajak, remove the anterior wall of the sphenoid down to the floor, sometimes using a chisel to remove part of the floor. In doing this at times we remove the rostrum of the vomer. All of the bone work being done submucously, there is very little hemorrhage and therefore, as a rule, one has very good observation. If it is desired at this point, the septum of the sphenoids can be removed and both cavities thrown into one large cavity.

The next step is to approach the anterior membranous wall of the sphenoid through the nasal cavity proper and make an incision horizontally, as high as possible, then with an incision downward from above, both laterally and medially, a flap of mucous membrane is freed the size of the opening in the bony wall. This is allowed to drop back into the sinus. The nose is then packed or not, according to one's preference following a submucous resection, and cared for post-operatively as a submucous resection.

It has been our observation that with this pro-

cedure we not only get a large opening in the anterior wall of the sphenoids, but as a rule this opening remains permanent. The middle turbinates are left intact, giving us the possibility of a normally functioning nose. The above procedure would not be applicable in an acute sinusitis, but where the condition has become chronic we have experienced no trouble in the way of intra-septal abscesses or other complications.

#### Case—

Miss S. In November, 1920, she complained of headache over the top of the head, especially in the morning and late afternoon; there was a dropping into the throat. She had frequent colds, with earache and deafness.

Examination showed septal deviation to the right; muco-pus coming from both sphenoids, seen with nasoscope. There was congestion of nasopharynx and pharynx. A diagnosis of bilateral sphenoiditis was made.

On December 10, 1920, a submucous resection and bilateral sphenoidectomy was done, the septa of the sphenoids removed. Following operation there was the usual relief of headache and other symptoms.

#### CHOLESTEOTOMA IN VITREOUS

Dr. R. D. Sleight, Battle Creek, presented a case of Cholesteotoma in Vitreous.

DR. R. D. SLEIGHT: This case was a man, age 71; no history of severe sickness. Urine, normal. Wassermann, negative.

About 10 years ago his eyes became blurred for about a month, then cleared up and he had no trouble until about one year ago, when he noticed the vision blurred in both eyes. This was about the first of June; I examined him on August 20.

I found his vision O. D. 20/100; O. S. 20/50. All external structures of the eye were normal; pupils react to light and are of normal size; field of vision contracted in both eyes, more marked in the right. Fundi examination showed, O. D., slight atrophy of the optic nerve, more marked at temporal side, and a few floating opacities in the vitreous. O. S., no atrophy of optic nerve, but a large number of white, glistening floating opacities.

The diagnosis was probable cholestrin, although these crystals may be tyrosin or phosphates.

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Report Malpractice Threats Immediately to Doctor F. B. Tibbals, 1212 Kresge Building, Detroit, Mich.

## Editorials

### A HAPPY NEW YEAR

With cordiality and sincerity do we extend to our members and readers our wishes for a Happy New Year. May we create about ourselves an atmosphere of courage and good cheer in which gloom and self-pity cannot thrive. May hope and joy and genuine contentment abound through this and all the coming years. That is our wish for you.

### BURNS

The discussion of the subject of burns has been varied and of long duration. As a result it is found that a host of measures and a myriad list of all sorts of therapeutic agents have been recommended and extolled. The plan of treatment is different almost in every hospital. Every physician assumes a changing procedure with every case. It seems that the lack of a general plan and the absence of an accepted routine has been created because we have not always borne in mind the changes produced in the tissues by extreme heat.

These changes vary in degree only and never in kind. They comprise:

Inflammation: Redness—First degree burns.  
Exudation: Blistering—Second degree burns.  
Suppuration: Infection—Bacterial.  
Destruction of Tissue—Third degree.  
Repair—Cicatrization.

Co-incident therewith in the second and third degree burns is shock and lung and kidney complications.

If one remembers these principles a rational, effective plan of treatment unfolds.

In first degree burns our attention is directed primarily to the relief of pain and the arresting of the acute erythema or inflammation that exists. For this nothing seems to be so soothing and effective as an application of a 5 or 10 per cent aqueous solution of picric acid, followed by a light paraffin (plain) dressing well protected by cotton and a bandage. Prompt relief usually results and rarely is it necessary to give a sedative. Ten grains of aspirin affords pleasing comfort. As a rule, but one or two subsequent dressings are required.

In second degree burns limited to a hand, foot or a localized area, our treatment becomes somewhat more extended. The blisters should be promptly opened and blistered epidermal layer removed. It had better be done first for eventually this has to be done in two or three days. We must also guard against infection. Infection as a rule does not ensue from the bacteria on the part, these are destroyed by the heat causing the burn. Infection is introduced most commonly from the septic character of our dressings and ointments and oils used. The less we say about the carron oil, salves, lotions and wax found in dressing rooms and hospitals or first aid kits, the better. Our advice is to not use them. Remember, you are dealing with an open wound. Let aseptic and antiseptic principles guide you. Use sterile instruments, use sterile gloves on your hands and proceed as follows:

1. Clean thoroughly the adjacent skin and epidermal layer covering the blisters with benzine or ether. Paint surrounding skin with a freshly prepared, 3 per cent tincture of iodine.

2. Open blisters and remove all loose layers of epidermis.

3. Apply a 5 per cent sol. of picric acid.

4. Apply liquid paraffin that has been thoroughly sterilized by sufficient heat in a water bath. Apply with spray or a swab.

5. Apply cotton dressing and bandage.

6. In redressing, observe same careful technic.

Prompt relief, speedy repair, freedom from infection and no cicatrix or ugly scars is the rule. Your results are satisfactory in direct proportion to the care you manifest in the de-



tails of treatment. Relief and comfort attends speedily when your first dressing is applied.

In extensive second degree burns the dressing is the same except that it includes larger areas of body surface. However, here we are confronted with a complication of shock and the possibility of an acute nephritis, urinary suppression and lung involvement. The same principles that govern the treatment of shock prevails in burns as does in shock occurring from other causes. Abundance of water, subcutaneous and by proctolysis and by mouth must be given and continued. Rest in bed and maintenance of body temperature is also essential. A full initial dose of morphine and continued administration of morphine to keep the patient fairly well narcotized as recommended by Crile should characterize your treatment until the danger of shock has passed. This plan will also be most effective in preventing lung and kidney complications.

In third degree burns the treatment instituted in second degree burns, only intensified, includes the outline of your procedure. The process of repair is treated the same as you would in the repair of any traumatic wound. Careful, detailed use of paraffin will, if persisted in, bring about satisfactory dermatization and lessen the need for skin grafting. It is well to remember that it takes time to complete repair. You cannot hasten it to any great extent. You must persist along the same line day after day and week after week. To abandon this plan of treatment is why infections, deformities, contractures and poor results ensue. Do not experiment around with the host of ointments and powders recommended. To do so you undo all that you have accomplished. The following of the outlined plan of treatment will, if attention is given to the details, secure the best possible results for you in your burn cases. We can attest to the satisfactoriness of these methods by reason of prolonged usage and highly satisfactory end results.

#### ORGANIZATIONAL WORK

Dr. Olin West, secretary of the American Medical Association, in a discussion of a paper on "Has the Medical Profession Lost the Position It Held?" presented before the Minnesota State Medical Society, makes some very pertinent observations and imparts wholesome advice. We are publishing his remarks with a recommendation that they receive thought and application on the part of our members, County officers and County Societies.

"I am one of those who do not believe that the real medical profession has lost in the esteem of the public, nor that it is without influence with the public. On the other hand, I believe that the true physician and the real profession which he repre-

sents stand higher in public esteem than ever before and exercise a greater and more helpful influence than ever before. The work and the benefits and the influence of scientific medicine have been carried to the neds of the earth, and in every land into which the light of civilization has penetrated the beneficent ministrations of physicians are being received and are gaining for the profession an esteem and confidence and influence greater than have ever before been enjoyed. Within the recent past I have had the privilege of exchanging greetings with a physician who does his work in far off Thibet, another who labors under a burning sun in tropical India, another from the remote recesses of interior Africa, and still another whose sphere of work is within the circle of the effulgent rays of the midnight sun. As I go about in our own country, I see great hospitals filled with those who believe and trust in the medical profession and turn to its members for aid when in distress by reason of disease, and I see other hospitals being erected by public subscription in order that the people may have the benefits of medical service under the best possible conditions. I see record breaking attendances at our society meetings and note what seems to me to be an air of unusual prosperity about those present. When I have opportunity to call on my medical friends at their offices, very frequently I find all chairs taken by patients who have to wait so long that one cannot doubt their entire confidence in the doctor for whom they wait, if not in scientific medicine in its entirety. The inquiries that pour over my own desk teach me that the people believe in the medical profession and in its ability to interpret and apply the fact and methods that scientific medicine has developed.

"If Dr. Savage will draw his strictures within somewhat closer lines and make his observations to apply in somewhat more narrow latitude I will be able to agree with him in most particulars. There are certain things about which we need to ponder and we do need to look ourselves as a profession squarely in the face and to heed some of the signs of the times. There are tendencies that need to be checked; there are, perhaps, some incumbrances which might be removed by an assumption of leadership which the profession has been slow to assume, though it seems to rightfully belong to it. It is undoubtedly true that individual members of the medical profession, some of whom are within the pale of medical organization, are guilty of reprehensible practices and that their transgressions bring reproach on the whole profession. Here is a job for medical organization to do, here is a reason for striving to perfect organization and for stimulating the zeal and efficiency of our component societies. In some spots our boards of censors and our councilors need to get busy. The membership of the American Medical Association, which is the combined membership of all of our state associations, was more than 90,000 on October 1. This peak will not be maintained, because many become indifferent or careless about maintaining membership and neglect to attend to the payment of dues until rather late in the year. We need some of those who are out, in; we also need to have some of those—a few—that are in, out. Then men who will not live up to the ideals of organized medicine, the men who violate the principles to which organized medicine holds, the men who will not subscribe to nor support the ethics of the profession and who will not live up to its traditions are not those about whom the protecting arm of our organization should be thrown nor to whom our recognition as an organized profession should be extended.

"Dr. Savage has offered some fine suggestions as

to what can be done along certain lines and I am glad that I can tell you that the American Medical Association is doing some of the very things he suggests. Some of these activities have been lately undertaken, some others are fairly well established. *Hygeia*, a journal of individual and community health, represents an effort upon the part of the Association to give to the public dependable information about the aims, purposes, possibilities, and even the limitations of scientific medicine. There is, it seems, some difference of opinion in the profession as to the wisdom of publishing such a journal. And, by the way, right there we encounter a difficulty which points out our need for more active, more earnest and more efficient medical societies, especially in our counties. It is extremely difficult, sometimes, even for those on the watch towers, to determine just where the weight of opinion lies. Better working societies would effect the crystallization of opinion so that surer guidance might be had. *Hygeia* now has a circulation in excess of 20,000. Some medical societies have subscribed for enough copies of the magazine to distribute it among all teachers, preachers and public officials within their respective territories. "Clip sheets" carrying abstracts of articles appearing in *Hygeia* are being sent to newspapers and other lay publications and are, to some extent, being used by them.

"The Bureau of Health and Public Instruction will, when the necessary organization can be perfected, prepare articles for the use of county or district societies to be published in newspapers. The matter of the preparation of articles to be distributed among newspapers all over the country is now being considered. Already a member of the editorial staff has written some articles of timely interest which have been distributed widely by a newspaper syndicate, which no doubt many of you have seen in print.

"The Bureau of Health and Public Instruction has also begun an effort to utilize the radio to good advantage. A representative of that Bureau has been on the program of Station KYW in Chicago several times and plans are being considered for extending this kind of service to other radio stations in a number of cities.

"The Bureau of Legal Medicine and Legislation, under the immediate direction of Dr. W. C. Woodward, is working might and main for protection of professional interests and for the public welfare. This Bureau is devoting itself to the study of legislation in which the medical profession is interested, whether for its enactment or defeat, and is lending all possible aid to the legislative committees of state medical associations. It is difficult to make the public or the members of legislatures understand that legislation proposed by our medical organizations is designed for the benefit of the people. I would not like to have public esteem for the medical profession measured by the response that we get in some state legislatures when we appeal to them for the enactment of laws which we sincerely believe will redound to the public good. Incidentally, if I may be permitted to give expression to a personal opinion, it appears to me that some of our committees offer too many bills. There is no virtue in superabundant legislation. The Bureau of Legal Medicine and Legislation has done some very effective work with government bureaus in Washington and is still struggling with them in an effort to secure relief from multitudinous rules and regulations that are confusing, if not oppressive.

"I have trespassed too long on your time and patience, though I would like to try to tell you of more of the work that is being undertaken by

the American Medical Association. There is nothing that can take the place of scientific medicine. The profession has but to deliver adequate service to those who are in need, whether they be rich or poor, great or small. It is the job of medical organization to help its members to deliver such service and there is much that our societies can do to that end if they will seize on the opportunities that offer."

## PREVENTION AND RELIEF OF CARDIAC DISEASE

Under the auspices and initiative of the Association for the Prevention and Relief of Cardiac Diseases an extended survey of the school children of New York City has recently been completed. The results are startling, interesting and encouraging.

In the whole city, excluding the parochial schools, registration of 817,000 children is recorded. Of this total there are 5,719 with organic heart disease. Of this number there are but 60 who are not able to be about. The incidence of heart disease ranges from 1.5 to 2.0 cases in every 100 school children.

These children were segregated into special classes. They then received careful physical examination, etiologic factors were removed, dietary and physical training was instituted, and proper supervision of home environment was provided. This resulted in a marked physical improvement, arrest of the cardiac involvement, lessened absence from school, better school work and grade progress. Parents were interviewed, educated and instructed. The school day absence of the pupils were reduced from 39.9 days to 16.8 days per pupil. Children and parents were relieved of worry.

This certainly reveals a most commendable undertaking that merits emulation in all the schools of our country. We recognize that the examination of school children for physical defects is rather widespread. As a rule the work stops when an organic heart disease is diagnosed. We want more than diagnosis, for much can be done for these cases. What is needed is careful medical supervision and treatment—more cardiac clinics not only for school children but also for adults. The movement should be instituted and controlled by the profession.

## SECRETARIES, ATTENTION!

The Council has determined that it would be inadvisable to conduct a conference of county secretaries during the month of January. It is recognized that such a conference, at that date, would demand a great sacrifice of time on the part of these county officers. Consequently the proposed conference will not be held until some date in the spring or summer.

## COUNCIL MEETING

The mid-winter meeting of the Council will be held in Detroit in the Wayne County Medical Society Building on Wednesday evening, January 16, 1924 at 8:00 p. m., and January 17, 1924 at 9:00 a. m. for the transaction of such business as may properly come before the Council.

J. B. Jackson, Chairman.  
F. C. Warnshuis, Secretary.

## DUES

Yes, it's time again to pay your local and state dues. The state dues are five dollars. They are due now and are payable on January 1. Delinquents are removed from the membership roll on April 1.

We especially urge that all dues be paid promptly this of all years. The reason for promptness is that on April 1, there is to be a re-apportionment of delegates to the A. M. A. based upon the number of paid members reported by state societies on April 1. We stand to lose one delegate if we neglect in securing our full registration of members in good standing. Therefor, please pay your annual dues to your county secretary promptly—this month.

## MEDICAL TESTIMONY

Courts trying criminal cases, and suits for recompense on account of bodily injury and Compensation Boards adjusting compensation for injuries sustained in the course of employment receive and weigh so-called expert medical testimony and opinions. In recent years some of this testimony has been given much publicity. By reason of the nature of some of this testimony the profession has sustained a "black eye" and individual chagrin occasioned because of the nature of the assertions and opinions that were advanced by these experts.

We quote the following from an article by Dr. Savage published in *Minnesota Medicine*:

"Who is there among us who has not blushed for his profession in listening to so-called expert medical testimony? A physician told me with pride of a case in court when he was to testify on behalf of the plaintiff. The papers had been drawn alleging an injury to the nerves of the leg. When the case was called for trial, this doctor found himself opposed by one of the leading neurologists of the state. He then instructed the attorney for the plaintiff to change the pleadings to show the case to be one of injury to the ligaments. The neurologist was left high and dry; and the proceedings being held many miles in the country and no surgeon being available, the doctor won the plaintiff's case. It is unnecessary to burden you with additional examples. Hennepin County made an effort to correct the disrepute that has fallen upon the medical profession on account of expert medical

testimony. The proposal was that each member of the Hennepin County Medical Society who might wish to testify in court should sign a card indicating in what subject he considered himself qualified to act as expert witness. By mutual agreement of opposing counsels three physicians were to be selected who had qualified in the specialty under which the case would fall. This medical jury of three, paid jointly by opposing sides, was to bring in the medical verdict. I understand the procedure has not been popular with the lawyers of Hennepin County. In discussing this with a lawyer, he said he thought the procedure never would be popular with the legal profession because it deprived the lawyer of his prerogative of bringing out all available testimony on cross-examination.

The following paragraph was written by Dr. S. Marx White and is taken from the report of your Committee on Public Policy and Legislation: "Only by a mechanism which will remove the temptation to modify testimony for gain, and make the expert an officer or employe of the court, instead of the litigants, will it be possible, in the opinion of your committee to do away with the many and serious evils of present day medical testimony."

## Editorial Comments

Here is an apparently sane attitude that might well be adopted by our County Societies and the State Society. It is extracted from a report of a committee rendered to the Minnesota State Medical Society and adopted.

"In presenting these resolutions, the committee does not wish them to be construed as in any manner showing a lack of appreciation of the valuable work of health organizations, or a lack of sympathy and desire for co-operation on the part of the medical profession, but rather as a sound working basis for greater harmony and fullest accomplishment. In order that the resolutions may have real force, they have been constructed on the principle that, while we assume no right to dictate to any health or social organization, we have the right to adopt rules governing the conduct of our own members.

"1. Resolved that no physician engaged, or associated with men engaged in private or consultation practice, shall become associated in any manner whatsoever with the establishment and maintenance of any new, free, permanent clinic or dispensary until such project receives the sanction and endorsement of a duly authorized committee of the county medical society in which such proposed clinic or dispensary is to be located.

"2. Resolved that no physician engaged as specified above shall associate himself with or become a party to any health or social organization engaged in the establishment and maintenance of permanent free clinics or dispensaries unless such organization maintains a social service investigation department of sufficient scope and efficiency that it can exclude from such free service individuals who are able to pay. The efficiency of such a department shall be determined by a duly authorized committee of the county medical society in which county such clinic or dispensary is conducted.

"3. Resolved that no physician engaged as above specified shall be a party to, or in any way associated with any voluntary organization conducting clinics or dispensaries of any type whatsoever where any compensation is accepted from the patient for medical services rendered.

"4. Resolved that no physician engaged as above specified, shall in any manner be associated with



any voluntary health organization making unsolicited visits in the home in case of sickness, or where there is a newborn child, unless such organization shall first confer with the attending physician, if there be one in charge of the case.

"5. Resolved that the responsibility for the carrying out of all of the provisions set forth, or for infringements thereon, shall lie directly with the physician involved. A plea of lack of knowledge shall not be considered a valid excuse, as it is incumbent among physicians, especially those engaged as clinicians or associated with public health or social organizations, to see that the work of their organizations does not unfairly infringe upon the rights of physicians in private practice.

"6. Resolved that because of the very close association of the work of the practicing medical profession and the public health organizations, it is desirable that, whenever possible, the county medical society in which county such organization is located, should have official representation on the governing board of such organization.

"7. Resolved that each county society be requested to appoint a committee on public health and publicity matters; this committee to be prepared to carry out the provisions of the foregoing resolutions, and to co-operate in a prompt and efficient manner with the public health activities of the county, also to co-operate with the Statewide Publicity Committee in their plans.

"8. Resolved that the secretary of this association be instructed to forward to each county society a copy of the above resolutions."

Are we having too many scientific papers read at our medical meetings? Would it not be better to have more clinical reports, case demonstrations and discussions? Are we not plentifully supplied by our medical journals with every sort and type of scientific articles so that we can read them at leisure? Will we not secure more practical help from a clinical case? This is something for secretaries and program committees to think about when arranging the scientific work of their Society.

Clinical groups and clinic corporations cannot violate our rules of conduct with less fear of being judged than can the individual doctor.

Unwarranted publicity campaigns on the part of groups and clinics are as censorable and amenable to penalization as is such activity on the part of individuals. Censorship and ethics committees should bear this in mind. Charity or semi-charitable purposes do not justify immunity. A group has no more license to ignore principles than has the individual.

The Council and the Committee on Public Health Education will hold a combined meeting and conference in Detroit on January 16 at 12 M., at the Wayne County Medical Building. In the evening the Council and the members of the Committee will be the guests of President Connor at dinner.

Did you ever employ a carpenter, painter or plumber and receive his bill? Well he doesn't forget to include every item. Supposing we rendered our statements likewise—they would then read like this:

To time doing dressing, 20 minutes @ \$5.00	
per hour .....	\$1.67
1/4 yard gauze.....	.08
1/2 oz. alcohol.....	.30
1/16 lb. cotton.....	.04
5 yards bandage (gauze).....	.12
1/12 foot adhesive plaster.....	.01
1 safety pin.....	.01

To services of helper (nurse)..... .75

Total.....\$2.98

Of course \$5.00 per hour rate is only arbitrary and used for illustration. The union scale would be \$10.00 to \$15.00 per hour. What do you think?

It seems to be wise and desirable that some general rules should be adopted governing the work of Clinico-Pathological and X-ray laboratories. The one vexations point is that anyone can go to one of these laboratories and have an analysis made or an X-ray taken and secure the report. True some directorates decline and only make the report to the family or designated physician. There are many, however, who sell their services regardless and see only the fee and not the ethics of the situation. The New York County Medical Society has formulated such a code. We in Michigan, might well follow the example. Then let us patronize the laboratory that renders service and is not solely a commercialized organization.

The Journal commences a new volume with this issue. No change occurs in its mechanical make-up and appearance. We are adopting a policy of printing reading material in our advertising pages. This is done to draw greater attention to our advertisers and to encourage your patronizing them.

Well, sure, its a Happy New Year and many of them. You have it in your power to determine in a large measure, the degree of your happiness. That happiness will be greater if one of your resolves includes being a better doctor, rendering better service and keeping up with the progress of medicine. The people demand service of a high type and unless you render it they are going to secure it elsewhere.

To those men, located at a distance from a laboratory, there need be no discouragement or feeling that they cannot treat their cases of diabetes. The discovery of insulin has not deprived you of further care of diabetics. On the contrary you will be called upon more frequently to supervise the care and treatment of diabetics. Insulin is a dangerous remedy. So is arsenic, thyroid extract and pituitrin. Insulin can be used with safety if you but become familiar with a few general principles and rules. From 75 to 80 per cent of your diabetics will not require insulin. They can be made sugar free and take in 2,000 calories of food value if you but learn the newer principles of feeding and proportioning of carbohydrates, proteins and fats. In the other 20 per cent of cases and in the emergencies of diabetic coma and pre-coma the use of insulin can be resorted to with safety if you will but take the pains to learn the rules of administration. We urge that you familiarize yourself with the literature and become proficient in the modern treatment of diabetes.

We congratulate and are proud of our Michigan hospitals. In the report of the last survey we find them all in Class "A"—100 per cent. Having made the requisite grade of the minimum standard of hospitals and instituted the needed changes and reforms in so far as equipment, keeping of records, diagnosis and the employment of laboratory measures to confirm diagnosis, and having provided for the continuance of these standardized procedures, is it not now time that we concentrate upon another feature of hospital activity? We refer to the training school and nursing problem. Let us not go off on a tangent and over-standardize so that we

lose individuality on the part of both patient and medical attendants. Let us foster personality and initiative to a reasonable degree. Let us prevent hospitalization from becoming too much like "Ford production." Let us not put all our patients on a mono-rail track. Let's breathe for awhile at our present point of efficiency, and while breathing, shall we not become concerned about standards of nursing, nursing requirements and training? This is a complicated condition requiring much thought and investigation before reaching a solution is possible. We may well start in to bring about a reformation now, for eventually we will be pressed to do so.

Naturally we expect complaints to reach us and they do. Some are groundless, others trivial and again others are based on only personal differences between two persons. There is, however, one complaint that comes up continuously and of late more frequently and from many more sources. It is concerned with finances and charges made by doctors and emanates from layman. This days mail brings in three that are summarized as follows:

1. Working girl, in a hospital for two weeks. Hospital bill was \$46.00. All the money she had was \$43.00. The hospital takes the \$43.00 and her watch as security for the other three dollars.

2. Servant girl, earns \$12.00 per week. Has acute mastoiditis. Is operated on and surgeon sends bill for \$300.00. It was compromised for \$100.00.

3. A woman, having an acute coryza, requested a treatment from a doctor. Her nose was sprayed and an application of a solution of argyrol made. No other examination, no laboratory work, nothing else was done. She was asked and paid \$10.00 for this service. She earns \$24.00 a week.

Are we not becoming commercialized when such practices are being put over on the people? Are you doing the right thing when you overcharge?

Apropos of the discussion of iodine in the treatment of goitre, it may be observed that the iodine therapy is not new. In 1500 B. C. the Chinese used marine plants and sponges. In the 13th century Villenenwe treated goitre by means of powdered calcinated sponges. Empirical we admit for it was not until 1819 that Straub of Berne discovered that iodine constituted the active principle of the calcinated sponges and the marine plants. The Chinese prescription in 157 B. C. recommended: "To cure goitre, take a pound of marine plants; wrap in a piece of silk and dip into ching of wine. In spring and summer take twice a day, and in autumn and winter three times." Probably not as tasty as our iodized chocolate tablets, but evidently effective. What is new under the sun?

The treatment of goitre and thyroid intoxication has not reached a positive basis. Not so very long ago we were all severely condemned if we attempted any therapeutics or the administration of iodine. Especially was this true of exophthalmic goitre. But times change and experiences change also. We now are beginning to receive reports on the use of iodine as pre-operative treatment for toxic goitre. One man reports on 100 cases and states that in 75 per cent of them, the administration of Lufol's solution obviated the need of preliminary ligation and that resection was done in one operative sitting. He observes that in these cases the toxic condition improved, exophthalmos diminished or disappeared and a markedly lowered pulse was noted. We know that in certain clinics some intensive work is being done preliminary to making reports upon the value of iodine therapeutics. If the intel-

ligent use of iodine makes for safer, less complicated surgery, we trust an early day will witness a pronouncement of safety.

Another resolve should include a determination to attend your county meeting regularly; to determine to visit some clinic or attend some post-graduate course at least on two occasions during the year. You need the inspiration and instruction of such a "brushing-up." Then, also plan a definite vacation period so that you can play. If you do this, a year hence you will be happier and you will be a better, healthier doctor.

By reason of the splendid work done by the Committee on Exhibits of the Kent County Medical Society of which Dr. A. V. Wenger was chairman, a net profit to the State Society of \$643.57 was turned into our treasury. This materially reduced the expense of our annual meeting.

One of the things that drives patients away from the regular profession and into the hands of cult representatives is the removal of appendices in which the patient is no better after the pomp and circumstances of a surgical operation. Worthless appendix operations are performed every day. Would it not be wise to carry our investigations a little further before urging operation for that "chronic pain" in the right side?

In the diagnosis of heart disease one does not consider physical signs alone, or signs combined with symptoms. Neither does one judge alone the response of the heart to exercise. In themselves they are not sufficient. One must consider all of them and in addition, the whole individual, body and soul together. There is many an erroneous diagnosis of heart disease that was based on a single sign or symptom. That is why our batting averages are low when we are checked up by one who is complete and thorough in the making of his examinations.

The census bureau has just issued some figures on automobile fatalities for 1922. During the year there were 11,666 deaths, a death rate of 12.5 per 100,000. In Detroit there were 176 deaths, a rate of 17.7. Grand Rapids 23, a rate of 16. For the state there were 574 deaths, a rate of 14.8. New York, New Jersey and California had rates of 16.7, 16.4 and 26. There were 960 deaths in California.

The question arises, are these deaths all due to careless, reckless driving? Does not defective vision play an important role? Is it not time that the issuance of a driver's license should depend upon the driver's acuteness of vision, rather than upon the fee he pays?

Please do not neglect prompt payment of your 1924 dues. Lighten the work of your County Secretary by sending in an early remittance. The state dues remain the same—\$5.00. You are "posted" and in "disgrace" if you fail to pay your club dues promptly—why feel different to your Medical Society dues?

The greatest number of bad results in fracture cases are obtained from failure to recognize that a fracture is present. This is due to incomplete examination and failure to obtain X-ray plates. It must be remembered that the old text-book signs of crepitus, deformity and undue mobility do not always present. You can have a fracture without them. Loss of function does not always ensue. With a history of trauma and the presence of tender-

ness, it is well that an opinion be not expressed until an X-ray has been made. You cannot afford to "guess" or take a chance.

## State News Notes

### COLLECTIONS

Physicians' Bills and Hospital Accounts collected anywhere in Michigan. H. C. VanAken, Lawyer, 309 Post Building, Battle Creek, Michigan. Refer-ence any Bank in Battle Creek.

For Sale—Wall plate, surgical instruments, Har-vard chair, dressing table, solution table, mailing cases, microscope and drugs of the late L. P. Parkhurst, M. D. Mrs. L. P. Parkhurst, 246 La Grave Avenue, Grand Rapids, Michigan.

On receipt of the Kentucky State Medical Journal, we learn this month, that Dr. J. B. Kennedy of Detroit was elected an honorary member of the Kentucky State Medical Society at its last annual meeting.

Dr. A. H. Welsh of Tuscon, Ariz., has located in Grand Rapids.

Dr. A. H. Williams, Grand Rapids, attended the annual meeting of the Radiological Society of North America, held in Rochester, Minn., the week of December 3.

Dr. Wm. Tappan of Holland was elected Com-mander of the local Post of the American Legion.

Dr. T. A. McGraw, Detroit, announces the re-moval of his offices to the David Whitney building. Practice limited to endocrinology.

Dr. H. S. Collisi, Grand Rapids, announces that he will limit his practice to surgery and obstetrics.

Dr. J. D. Brooks, Grand Rapids, was operated upon for chronic appendicitis on November 30. Dr. Max Ballin was the attending surgeon.

Dr. J. S. Pritchard addressed the Kent County Medical Society on November 29.

Doctor, we cannot record interesting news items unless you send them. They should reach us not later than the 15th of the month.

Dr. H. M. Blackbourne, Grand Rapids, has taken a years associate service in diseases of the ear, nose and throat with a leading clinician in Chicago.

Dr. B. R. Corbus, Grand Rapids, attended the annual meeting of the Montcalm-Ionia Medical Society on December 13 and read a paper on Insulin.

Dr. J. F. Cardwell, Grand Rapids, is spending the winter in Florida.

Annual meetings of County Societies are being held. Reports of these meetings, reports of com-mitees and names of officers elected are desired for publication in the Journal. Other Societies want to know what your Society is doing. Please send in these reports and thereby enable us to impart the information.

The Michigan Hospital Association will hold its

annual meeting in Grand Rapids the last part of January.

Yes, we miss the news items of the Detroit pro-fession. Will not some member from Detroit volun-teer as correspondent?

A copy of *Le Progres de la Cote D'Or*, a daily newspaper published in Dijon, France, received by Colonel Angus McLean contains a lengthy account of an Armistice Day celebration at the **Foyer du Soldat** in that city at which honor was paid the members of Base Hospital 17 (Harper unit) which was stationed in Dijon for more than a year and a half under the command of Colonel McLean. At the celebration in the **Foyer**, which is an institution similar to our war time Y. M. C. A. army huts, various military and civil officials of Dijon and the department of Cote D'Or spoke of the pleasant re-lations that obtained between the members of the American units stationed in Dijon and the French civilian and military population of the city and its vicinity. Particular reference was made to Colonel McLean and the members of his command and a feature of the evening was the showing of a large stereopticon view made from a group photograph of the personnel of Base Hospital 17. The account concludes with the statement that those present drank a toast in champagne to the members of Base 17.

The following officers of the Staff of Base Hospital 17 exceedingly regret that they did not participate in the drinking of the toast:

Col. Angus McLean, Maj. George E. McKean, Maj. Thomas K. Gruber, Lt. Col. Preston W. Hickey, Lt. Col. Harry N. Torrey, Maj. Louis J. Hirschman, Maj. Ernest K. Cullen, Maj. Walter D. Ford, Maj. Robert G. Owen, Lt. Col. Rolland Parmeter, Maj. Wm. A. Spitzley, Maj. John C. Dodds, Maj. James F. Breakey, Maj. Albert D. LaFerte, Capt. Edward J. O'Brien, Capt. Bruce C. Lockwood, Maj. Duncan A. Campbell, Capt. Hampton P. Cushman, Capt. Percy L. Belt, Maj. Frederick G. Buesser, Maj. Alexander M. Stirling, Capt. Wm. T. Shannon, Maj. Earl C. Barkley, Capt. P. L. Pound, Capt. Hugh A. Sullivan, Capt. James B. Seeley, Maj. B. H. Larsson, Capt. Harry A. Dibble, Lt. Col. Wm. H. Honor, Capt. A. E. Catherwood, Capt. Theodore H. Smith, Mac H. Wallace, Chaplain.

The many members who have attended meetings of the A. M. A. will be grieved to learn of the death of William Whitford. Mr. Whitford has reported sessions of the A. M. A. for 35 years. His death occurred at Oak Park, Chicago on December 10.

The next annual meeting of the A. M. A. will be held in Chicago, the week of June 9.

The Faculty of Detroit College of Medicine and Surgery presented the Board of Education of Detroit with a portrait of the late Dr. Ernest Keys Cullen.

Dr. Cullen was formerly Professor of Gyneacology at the Medical School, also attending Gyneacologist at Receiving and Harper Hospitals and served in the A. E. F. Base Hospital No. 17 for about two years.

The Board of Education accepted the portrait with much appreciation and has directed the Dean of the School to have said portrait placed in the School Library.

The American Association for the Study of Goitre, composed of Goitre Surgeons, Internists, Anaesthe-tists, Pathologists and Radiologists, will hold its



annual meeting in Bloomington, Ill., January 23, 24 and 25.

The 23rd, will be devoted to operative clinics, featuring local anaesthesia and gas anaesthesia. The scientific session will begin the morning of the 24th.

Among those upon the program are Doctors Andre Crotti of Columbus, Ohio, William Seaman Bainbridge of New York City, W. Wayne Babcock of Philadelphia, F. H. Lahey of Boston, Wm. Englebach of St. Louis and Dr. Loyd Arnold of Chicago.

Those interested should communicate with Dr. E. P. Sloan, president, Bloomington, Illinois, or Dr. Judson D. Moschelle, secretary, Indianapolis.

## Deaths

**RESOLVED:** That in the tragic death of the late William Samuel Shipp, M. D., the Michigan Board of Registration in Medicine has lost a most efficient, capable, and much beloved member. From both a mental and physical standpoint Dr. Shipp's make-up emphasized all those attributes of heart and mind which are part and parcel of the ideal citizen and physician. In his relations with his patients, his friends, and the public, these unusual attributes were always in evidence.

His tragic death was directly the result of his conscientious application to principle involved as a member of and chairman of the Draft Board of his county during the Great War, which in effect constitutes a Supreme Sacrifice.

Authority is given by the state to the Board of Registration in Medicine to render judgments involved in medical practice and conduct, therefore its members are of the unanimous opinion that Dr. Shipp's heroism should receive suitable post-recognition by the government for notable services rendered the United States during the stress of the Great War.

The death of Dr. L. P. Parkhurst, Grand Rapids, has been reported. The Doctor was born in 1865 and died at the age of 58 years. He was a graduate of Rush Medical College.

The death of Dr. A. E. Bonneville, Alpena, has been reported. He was born at Bresler Falls, N. Y., and received his medical education at the University of Paris and the Physicians and Surgeons' College of Chicago. In 1896 he located in Alpena.

The death of Dr. James A. King, of Manistee, for many years a member of the Manistee and Michigan State Medical Societies and a graduate of the University of Michigan, has been reported.

## County Society News

### GENESEE COUNTY

The Genesee County Medical Society met for noon luncheon at the Hotel Dresden, November 14, 1923.

Dr. C. D. Camp, Professor of Neurology, University of Michigan gave a very interesting talk on "Mental Disorders Simulating or Reinforcing Physical Invalidism." This subject is one which should be a very important one. On the standpoint of efficient care of patients with physical ills, too little attention no doubt is given to it, and as a result a great many of our patients consult chiropractors or some other one of the cults. A free discussion followed.

The Genesee County Medical Society met for noon luncheon at the Hotel Dresden, November 28, 1923.

Dr. Warfield, Professor of Medicine at the University of Michigan, addressed the Society on "Arterio Sclerosis." This was a very instructive and practical subject. Dr. Warfield is well qualified to talk on this subject inasmuch as he has done a vast amount of research work in this direction.

The Genesee County Medical Society met for noon luncheon at the Hotel Dresden, December 12, 1923.

Dr. Phil Marsh, Instructor in Medicine at the University of Michigan and in charge of the work on Diabetes at the University Hospital, gave a very interesting talk on "Non-Diabetic Diseases of the Pancrea." G. J. Curry, Secretary.

### HOUGHTON COUNTY

The Houghton County Medical Society met in November and December. A part of the program in November consisted of symposium on Typhoid.

Dr. Frank Marshall presented "The Recent Epidemic in L'Anse," and emphasized its explosive occurrence—confinement to the school children almost entirely and the probable source of the disease coming from the influx of new labor and the contamination of a small strain, the water of which the children had used for drinking purposes on the opening of the new school year.

Miss Mills of the Health Department spoke on "Laboratory Diagnosis," and Dr. J. E. Scallon on the "Full Diet in Typhoid," emphasizing the use of grated apples and nuts as a part of the dietary regime.

Dr. W. K. West gave the history of a case of Pancreatic Cyst with operative interference and recovery of the patient. Discussion brought out that sudden death may be caused by hemorrhage in acute pancreatitis.

In December Dr. P. D. Bourland, who was in Germany during the months of July and August, addressed the Society. The doctor visited the hospitals in all the larger German cities and found a woeful lack of material to carry on the work. Nearly all the hospitals needed a replacement of instruments, a refurbishment, a redecoration, and a general rehabilitation.

He spoke of the Medical Profession as carrying on an increased amount of work with the greatest economy and a spirit of self sacrifice and with hardly enough remuneration to keep themselves and families existing properly. And he spoke in behalf of the profession in Germany as needing all the assistance and aid that could be given them.

Christmas Greetings and a sincere wish that the Secretary, Journal and its Staff, and the whole medical profession be blessed with happiness and health during the coming year.

Very truly yours,  
Houghton County Medical Society,  
C. E. Rowe, Secretary.

### KENT COUNTY

The Kent County Medical Society held its annual meeting on December 12. The retiring President, R. J. Hutchinson delivered a splendid ex-augural address. Reports of standing committees were received and acted upon. The Secretary's annual report revealed 178 paid-up members.

The following officers were elected for the coming year:

President, W. E. Northrup; Vice-President, Alex Martin; Secretary-Treasurer, F. C. Kinsey (re-elected); Medico-Defense, G. L. McBride; Delegates, A. V. Wenger, J. S. Brotherhood, H. J. Beal, G. H. Southwick.

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